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ABSTRACT

The concepts associated with individually guided education (IGE) are described in general. Subsequent chapters discuss IGE from a variety of perspectives, with emphasis on implementing and adopting educational change; organization theory and school structure; leadership; and decision making. Each chapter explains the underlying theoretical model, and discusses the findings of IGE research projects, emphasizing administrative and staff relationships. The concluding chapter, "IGE and the Renewal of Education," surveys the current educational scene and examines the impact of these studies for improving administrative, teaching, and learning processes in future IGE schools. The appendix contains detailed abstracts of twenty research studies on IGE school administration organization which have been published by the Wisconsin Research and Development Center for Individualized Schooling. These abstracts present the study's purpose, hypotheses, methods of data collection, conclusions, and implications. (GDC)

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ADMINISTRATIVE AND STAFF RELATIONSHIPS IN EDUCATION: Research and Practice in IGE Schools

Edited by James M. Lipham
and John C. Daresh

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**Wisconsin Research and Development
Center for Individualized Schooling
Monograph Series**

**University of Wisconsin-Madison
School of Education**

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Report from the Project on
Studies of Administration and Organization for Instruction

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Faculty Associate

6.50

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PREFACE

During recent years substantial research has been conducted concerning educational change, organizational structure, leadership, and decision making in elementary schools implementing Individually Guided Education (IGE). This monograph summarizes and synthesizes the studies conducted at the Wisconsin Research and Development Center for Individualized Schooling (R & D Center) in the Research Unit on Administration and Organization for Instruction. The major purposes of this research unit have been (1) to conduct research to clarify organizational roles and relationships, leadership, and decision-making processes and behaviors, and staff and student behaviors and outcomes in schools implementing IGE, and (2) to disseminate the results of the research to professors and practitioners so that instruction for individual students in the schools may be improved.

By the time the Research Unit on Administration and Organization for Instruction was established at the R & D Center in 1972, the multiunit form of elementary school organization had been described (Klausmeier, Morrow, & Walter, 1968), the major components of IGE had been defined (Klausmeier, Quilling, Sorenson, Way, & Glasrud, 1971), and IGE was rapidly being adopted in schools throughout the nation (Ironside, 1973). The research reported here concerns the multiunit IGE elementary school, so Chapter I provides an overview of the components of IGE and an introduction to the studies conducted at the R & D Center regarding administrative and staff relationships in multiunit IGE elementary schools.

From 1972 to 1978, twenty studies were completed in the Research Unit on Administration and Organization for Instruction by doctoral students in the Department of Educational Administration at the University of Wisconsin-Madison. Abstracts of these studies are included in Appendix A. All of the studies have been published as Technical Reports by the R & D Center and are available through the Educational Resources Information Center (ERIC). Appreciation is expressed to these researchers for their conceptual, practical, and personal contributions, as well as to those who served as contributing authors by synthesizing the work reported in this summary monograph. These authors are identified with each of their chapters.

Work in the Research Unit on Administration and Organization for Instruction, headed by Professor James M. Lipham, draws extensively on the expertise of professors in educational administration and other departments at the University of Wisconsin-Madison. We acknowledge with appreciation those who made substantial theoretical and methodological contributions to the studies reported here. Professors Marvin J. Fruth, Donald N. McIsaac, and Richard A. Rossmiller not only served on many examining committees but also were faculty advisors to some of the student researchers.

Appreciation is also expressed to the National Institute of Education, Department of Health, Education, and Welfare, and to the School of Education, University of Wisconsin-Madison, for their continued financial support of the R & D Center. Such sustained funding not only permitted systematic study of significant variables, but also enabled the R & D Center to attract and support students of the highest caliber.

We wish to acknowledge with appreciation the efforts of our Unit Secretary, Elvira Benter, for her patience, skill, and careful attention to detail in preparing this manuscript for publication. To John B. Artis, Lee R. Brittenham, and Richard N. Zimman we express our thanks for their critical review of the final chapters and help with references. Natalie Sewell and staff of the Media Services in the R & D Center also provided superb assistance in editing and publishing this monograph.

It is impossible to identify by name those school districts, schools, or individuals who served as the subjects of the research. Suffice it to say, however, that none of the studies would have been possible without the cooperation and assistance of many school superintendents, principals, unit leaders, teachers, students, and others. We hope, therefore, that this publication will be useful to school personnel in their continued efforts toward refinement and renewal of elementary schools.

Many of the research findings also possess powerful implications for the extension and application of IGE concepts and practices in middle, junior, and senior high schools. Since the basic theoretical constructs utilized in the studies will also be of interest to scholars in educational administration generally, several suggestions are made in each chapter for further research and development needed to improve administrative and staff relationships in the schools.

J. M. L.
J. C. D.

Madison, Wisconsin
February 1979

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Chapter I

IGE IN MULTIUNIT ELEMENTARY SCHOOLS

James M. Lipham
and
Glenn A. Neiner

IGE is a total system of education which has been developed under the leadership of the Wisconsin Research and Development Center for Individualized Schooling (R & D Center). IGE was conceived as a comprehensive alternative form of schooling designed to produce higher educational achievements by providing for differences among students in rate of learning, learning style, and other characteristics. It began in embryonic form in 1965 when a project called Maximizing Opportunities for Development and Experimentation in Learning in the Schools was initiated at the R & D Center (Klausmeier, Goodwin, Prasch, & Goodson, 1966). Since then, IGE has been designed, implemented, evaluated, and refined through a continuous program of research, development, and dissemination.

In this chapter, a brief description of the seven major components of IGE is presented to provide the reader with an overview of IGE as an educational system. Then, a description is given of personnel roles in the multiunit school, since the studies reported here dealt with the multiunit organization. Finally, an overview is given of the chapters to follow which report research concerning administrative and staff relationships in multiunit IGE elementary schools.

The Components of IGE in Elementary Schools[1]

IGE in elementary schools consists of seven major components: the multiunit organization, instructional programming for the individual student, evaluation for educational decision making, curricular materials compatible with IGE, home-school-community relations, facilitative environments for IGE, and the continuing research and development required to improve IGE

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[1] Portions of this section are drawn from: H.J. Klausmeier, Origin and overview of IGE, in H.J. Klausmeier, R.A. Rossmiller, & M. Saily (Eds.), *Individually Guided Elementary Education: Concepts and practices.* New York: Academic Press, 1977, pp. 10-23.

(Klausmeier, Rossmiller, & Saily, 1977). These basic components are shown in the model in Figure 1.1. In this overview of IGE as an educational system particular emphasis is placed on the multiunit school organization.

The Multiunit Organizational Structure

The multiunit organization, the first component of IGE, was designed to produce a school environment which facilitates instructional programming for the individual student by establishing semiautonomous instructional units. Figure 1.2 depicts the prototypic organizational structure of the multiunit school. The multiunit structure was created to articulate vertical and horizontal relationships, affix organizational roles and responsibilities, facilitate immediate and long-range planning, increase involvement in educational decision making, and improve communication among school personnel (Lipham & Klausmeier, 1976).

As shown in Figure 1.2, the multiunit organization operates on three distinct levels: the Instruction and Research Unit (I & R Unit) at the teaching-learning level, the Instructional Improvement Committee (IIC) at the school building level, and the Systemwide Program Committee (SPC) at the school district level. Each of these levels has a designated structure, membership and functions.

The Instruction and Research Unit (I & R Unit). The nongraded I & R Unit is composed of students whose ages may differ by two to four years. Each I & R Unit includes a unit leader who is also a teacher, three to five staff teachers, other appropriate personnel who vary according to particular school settings, and 100 to 150 students. The basic functions of the cooperative instructional team of each I & R Unit include planning for instruction, teaching the students, evaluating student learning experiences, and enhancing home-school relations. Since all units must continuously conduct practical research to devise and evaluate an instructional program appropriate for each student, the term "research" is included in the title to reflect this emphasis.

The unit leader and staff members of the I & R Unit work cooperatively to fulfill the major functions related to teaching and learning. The instructional program in each unit is planned, implemented, and evaluated by the entire staff of the unit. In curriculum and instruction, the unit staff members establish the range of objectives for the unit, specify objectives for each student, and select appropriate activities and materials to assist the students in attaining the objectives. It is essential, therefore, that sufficient time be found for unit staff to meet and plan their cooperative work.

Unit staffs are most successful when they arrange sufficient time for planning and evaluating the instructional program, cooperate fully in their exchange of information and knowledge, and divide labor according to their abilities, interests, and expertise.

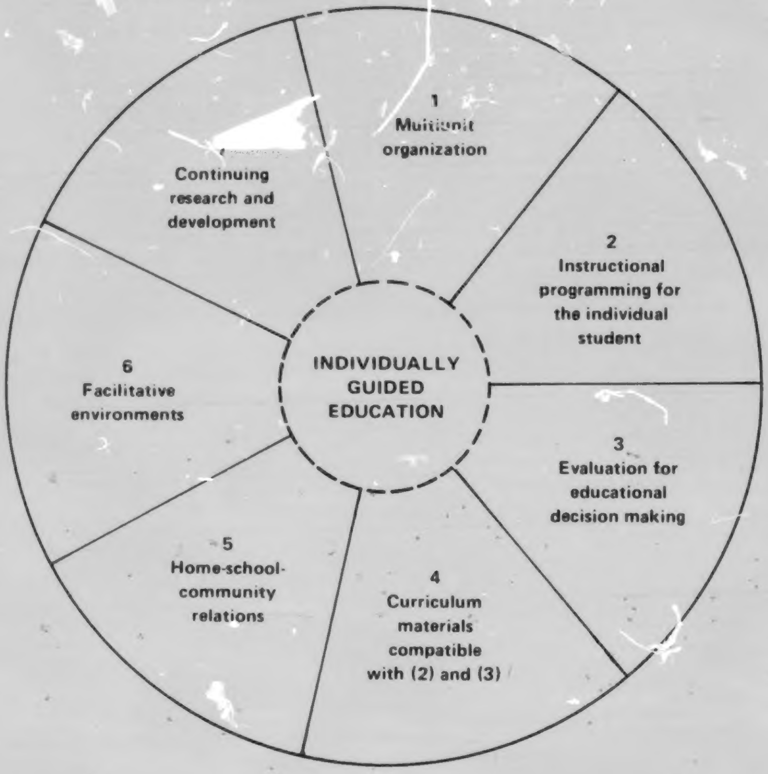

1
Multiunit
organization
2
Instructional
programming for
the individual
student
3
Evaluation for
educational
decision making
4
Curriculum
materials
compatible
with (2) and (3)
5
Home-school-
community
relations
6
Facilitative
environments
Continuing
research and
development
INDIVIDUALLY
GUIDED
EDUCATION

Figure 1.1. Major Components of Individually Guided Education.

Based on: Klausmeier, H. J., Quilling, M. R., Sorenson, J. S., Way, R. S., & Glasrud, G. R. *Individually Guided Education and the multiunit school: Guidelines for implementation.* Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971.

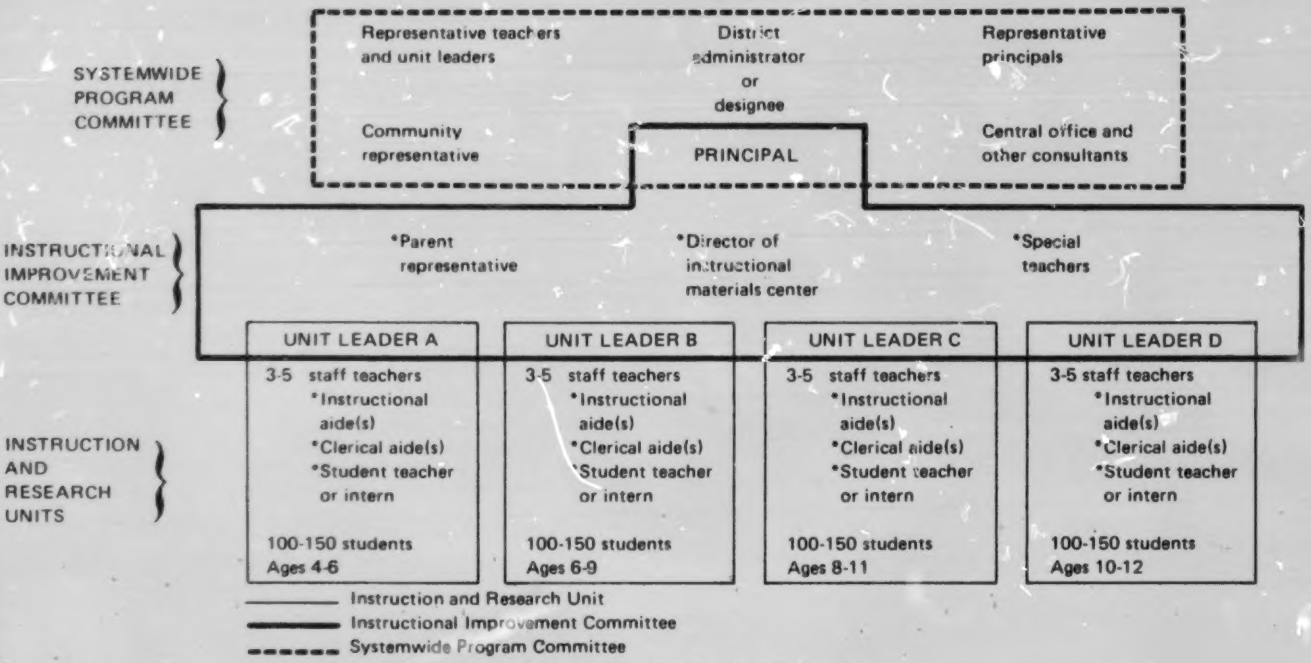
The Instructional Improvement Committee (IIC). The IIC operates at the school building level of the organization. This committee includes the principal, the unit leaders, and other designated representatives in some schools, as noted in Figure 1.2. The IIC is organized and chaired by the building principal. The main functions of the IIC are stating the schoolwide educational objectives and outlining the educational program for the entire school. This committee interprets and implements systemwide and statewide policies that affect the school's educational program; coordinates the activities of the I & R Units to achieve continuity in all curricular areas; and arranges for the use of time, facilities, and resources that are not managed independently by the units. The IIC thus deals primarily with planning, decision making, coordinating, and evaluating the activities related to the total program of the local school.

A primary responsibility of the IIC is to assume the initiative for identifying and developing the educational objectives for the school's total educational program. The IIC also selects or develops the means by which the educational objectives and program are to be evaluated. These efforts lead naturally to guidelines for identifying, selecting, developing, and utilizing instructional materials and procedures. A model of instructional programming for the individual student provides guidance in these matters. Since education must be provided within the context of state and school district policies and regulations, the IIC ensures that such policies and regulations are interpreted appropriately.

A continuing program of staff development is essential in implementing IGE successfully. The IIC must therefore plan and carry out inservice activities to meet the needs of the entire staff. The IIC must articulate its inservice plans with the school district office, which often sets priorities and allocates time and other resources for staff development.

Teachers and other I & R staff are involved in both the planning and coordinating responsibilities of the IIC through the unit leaders. The unit leaders perform a significant representational function: they convey concerns, insights, and other information upward from the unit staffs to the IIC. Plans and guidelines developed by the IIC are likewise transmitted downward to unit staffs by the unit leaders. Thus, unit leaders are responsible for representing unit members, communicating policies and decisions, and managing unit activities, as well as for teaching students.

The IIC has program development and coordination responsibilities, but does not assume management responsibilities. It typically meets a minimum of once a week for at least two hours. The principal, as chairperson, formulates the agenda in consultation with unit leaders. Together, they share responsibility for decision making about the total program of the school.


SYSTEMWIDE PROGRAM COMMITTEE
Representative teachers and unit leaders
District administrator or designee
Representative principals
Community representative
PRINCIPAL
Central office and other consultants
INSTRUCTIONAL IMPROVEMENT COMMITTEE
*Parent representative
*Director of instructional materials center
*Special teachers
INSTRUCTION AND RESEARCH UNITS
UNIT LEADER A
3-5 staff teachers
*Instructional aide(s)
*Clerical aide(s)
*Student teacher or intern
100-150 students
Ages 4-6
UNIT LEADER B
3-5 staff teachers
*Instructional aide(s)
*Clerical aide(s)
*Student teacher or intern
100-150 students
Ages 6-9
UNIT LEADER C
3-5 staff teachers
*Instructional aide(s)
*Clerical aide(s)
*Student teacher or intern
100-150 students
Ages 8-11
UNIT LEADER D
3-5 staff teachers
*Instructional aide(s)
*Clerical aide(s)
*Student teacher or intern
100-150 students
Ages 10-12
Instruction and Research Unit
Instructional Improvement Committee
Systemwide Program Committee

*Inclusion of these persons will vary according to particular school settings.

Figure 1.2. Multiunit Organization of an IGE School of 400-600 Students.

Adapted from: Klausmeier, H. J., Morrow, R. G., & Walter, J. E. *Individually Guided Education in the multiunit elementary school: Guidelines for implementation.* Madison: Wisconsin Research and Development Center for Cognitive Learning, 1968.

The Systemwide Program Committee (SPC). The SPC is at the district level of the organization. The primary functions of the SPC are to plan, implement, and evaluate curriculum and instruction, staffing, home-school-community relations, and financial and physical resources. The SPC establishes the operational guidelines for the schools in the district which adopts IGE and recommends changes in school district policies to facilitate implementation.

Since capable and qualified principals, unit leaders, and teachers who are compatible and complementary in their roles are essential to the success of the school, the identification of initial staff, as well as the recruitment of new staff for vacancies, is a vital concern of the SPC. Continuous inservice training is necessary to enhance the understanding, attitudes, and skills of the staff. It is important, therefore, for the SPC to develop and recommend school district policies concerning staff recruitment, assignment, development, evaluation, and transfer.

To ensure the support of citizens for the IGE program, the SPC should establish the guidelines for communicating with and involving extraorganizational individuals, groups, and agencies in the program of the schools.

The SPC typically meets monthly and is chaired by the superintendent or an appropriate designee. The membership includes representative central office consultants, principals, unit leaders, teachers, parents, and other citizens. Important criteria for membership on the SPC are that its members have decision-making power, specialized knowledge to contribute to the success of IGE, and can represent all levels of the organization.

As an alternative to the SPC some other central office structure may be utilized to implement IGE. In this regard, considerable flexibility is required since local school districts differ greatly in size, structure, and other characteristics.

Instructional Programming for the Individual Student

The Instructional Programming Model (IPM) was conceptualized to manage the teaching-learning process that facilitates each student's development in the cognitive, psychomotor, and affective domains (Klausmeier et al., 1971). The IPM specifically takes into account each student's beginning level of performance, rate of progress, learning style, motivational level, and other characteristics.

Seven sequential steps are followed, as shown in Figure 1.3, in implementing instructional programming for the individual student regardless of the commonality of objectives, criteria for mastery, or sequence of the units of instruction (Klausmeier, 1977). The model also implies that objective-based instruction may proceed differently for different kinds of objectives within the same curricular area or across various curricular fields.

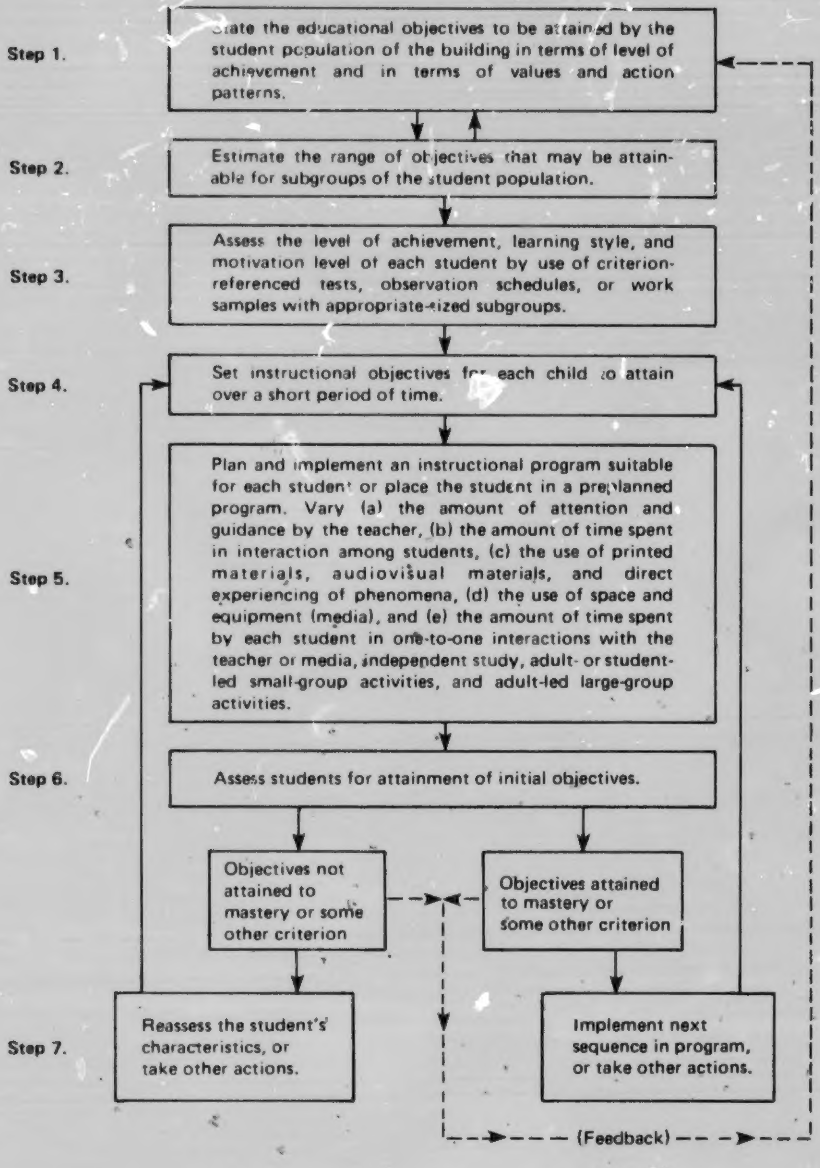

Step 1.
State the educational objectives to be attained by the student population of the building in terms of level of achievement and in terms of values and action patterns.
Step 2.
Estimate the range of objectives that may be attainable for subgroups of the student population.
Step 3.
Assess the level of achievement, learning style, and motivation level of each student by use of criterion-referenced tests, observation schedules, or work samples with appropriate-sized subgroups.
Step 4.
Set instructional objectives for each child to attain over a short period of time.
Step 5.
Plan and implement an instructional program suitable for each student or place the student in a preplanned program. Vary (a) the amount of attention and guidance by the teacher, (b) the amount of time spent in interaction among students, (c) the use of printed materials, audiovisual materials, and direct experiencing of phenomena, (d) the use of space and equipment (media), and (e) the amount of time spent by each student in one-to-one interactions with the teacher or media, independent study, adult- or student-led small-group activities, and adult-led large-group activities.
Step 6.
Assess students for attainment of initial objectives.
Objectives not attained to mastery or some other criterion
Objectives attained to mastery or some other criterion
Step 7.
Reassess the student's characteristics, or take other actions.
Implement next sequence in program, or take other actions.
(Feedback)

Figure 1.3. Instructional Programming Model in IGE.

Adapted from: Klausmeier, H. J., Quilling, M. R., Sorenson, J. S., Way, R. S., & Glasrud, G. R. *Individually Guided Education and the multiunit school: Guidelines for implementation.* Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971.

Evaluation for Educational Decision Making

Decision making is an integral component of a viable educational system. The rational process of decision making (Lipham, 1974) includes the following six steps: (1) identifying the problem (defining and establishing priorities for the decision to be made); (2) setting the decision criteria (determining what information and values are relevant to the decision); (3) obtaining information (utilizing appropriate mechanisms to collect, summarize, and deliver the required data at the appropriate time); (4) formulating alternatives (relating the data to the decision criteria); (5) making the decision (choosing an alternative); and (6) implementing the decision (assessing progress and outcomes).

The crucial decision-making area upon which all other decisions converge is instructional programming for the individual student. Here, the evaluation of each student's abilities, learning characteristics, attitudes, and achievements is aimed at providing information at three specific times: at the beginning of a unit of instruction, during an instructional sequence, and at the end of a unit of instruction. The evaluation of student learning follows these five steps: (1) formulating instructional objectives and setting relevant criteria of attainment, (2) measuring achievement, (3) relating the measures to the criteria, (4) judging performance, and (5) acting on the judgments (Klausmeier & Goodwin, 1975). This model of evaluation is applied in all domains—cognitive, affective, and psychomotor.

Compatible Curricular Materials

The success of IGE or other forms of schooling depends heavily on the availability of curricular materials compatible with instructional programming for the individual student. Klausmeier (1975) has indicated that curricular materials for any instructional system should incorporate the following four main attributes:

1. The content incorporated in the materials should be accurate and reliable.
2. The content should be learnable by the particular students for whom it is prepared.
3. The materials and related activities should be teachable.
4. The materials should be appropriate in terms of cost, attractiveness, and the amount of inservice teacher education required.

Procedures recommended to schools for identifying and using instructional materials follow this general sequence: First, broad terminal educational objectives related to the major curricular areas are formulated at state, district, and school levels. Then, available printed and audio-visual instructional materials are identified by representative committees of teachers and administrators. From this list, the IIC and the I & R Units of each school select materials which are appropriate for each student to attain specified instructional objectives. Each building staff then recommends to district committees the specific materials needed for the students in a particular school.

Home-School-Community Relations

The successful implementation of IGE depends in large measure on an active program of home-school-community relations. Three general aims of a productive home-school-community relations program include (1) making the staff aware of available resources and responsive to the educational expectations of the community, parents, and citizens; (2) making the community, parents, and citizens aware of and responsive to the requisites of the instructional program implemented through IGE; and (3) identifying and using means of actively involving both staff and community in the awareness, commitment, changeover, refinement, and renewal stages of IGE (Walter & Lipham, 1976).

As shown in Figure 1.4, within the system of IGE the program of home-school-community relations operates at three interdependent levels. The level of the I & R Unit relates primarily to the home; the IIC relates to the local school community; and the SPC relates to the total school district (Bowles & Fruth, 1976). In these relationships, the major functions performed include analyses of citizens' expectations; communication with publics and subpublics; involvement of parents, citizens, and others; and resolution of problems and issues affecting the school.

Facilitative Environments

To maintain and strengthen each IGE school, a system of supportive, facilitative environments is required to enable the school to become increasingly self-renewing. Facilitative environments, consisting of the requisite human and material resources, are both intraorganizational and extraorganizational (Paul & Lipham, 1976). The intraorganizational environment is represented by the multiunit organizational structure whose focus is on obtaining, providing, and managing the human and material resources which constitute the learning environment.

Extraorganizational facilitative environments are represented by the relationships which must be established and sustained with the state education agency, intermediate educational agencies, teacher education institutions, and other groups such as teachers' associations and parents' organizations (Klausmeier, Walter, & Lins, 1974). Formal networks and informal arrangements are necessary to link the local school with other schools and agencies having the structure, resources, and capability to initiate and sustain educational change (Paul & Lipham, 1976). Local, regional, state, and national associations are instrumental in the diffusion, adoption, and implementation of IGE.

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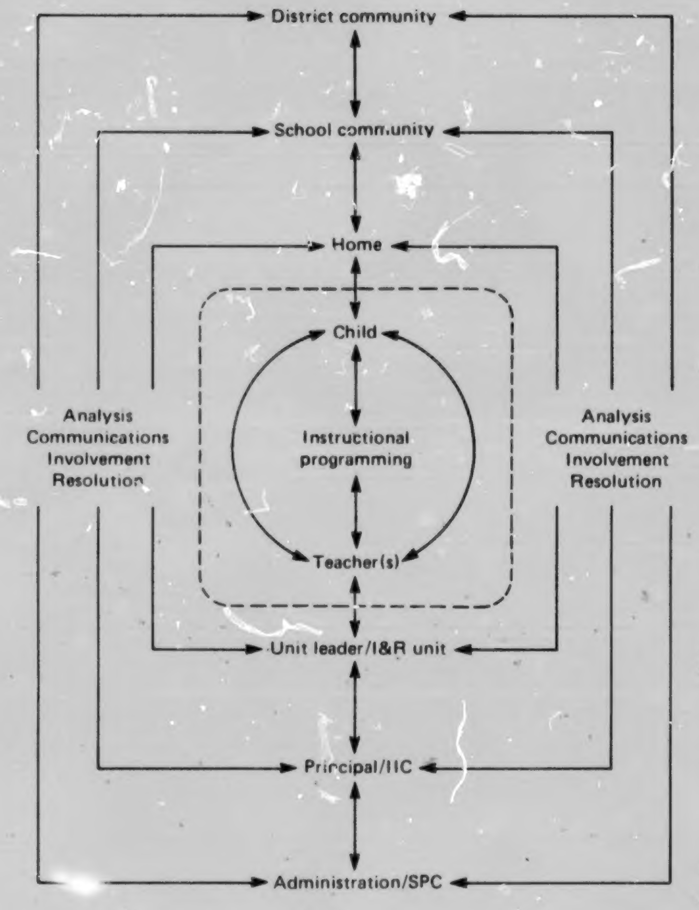
District community
School community
Home
Child
Instructional programming
Teacher(s)
Unit leader/I&R unit
Principal/IIC
Administration/SPC
Analysis
Communications
Involvement
Resolution
Analysis
Communications
Involvement
Resolution

Figure 1.4. Home-Community-School Relations in the IGE School.

Taken from: Kim, J. E., Fruth, M. J., & Bowles, B. D. *Home-school-community relations: The state of the art.* Madison: Wisconsin Research and Development Center for Cognitive Learning, 1976.

Continuing Research and Development

The seventh and final component of IGE, continuing research and development, provides for the refinement and renewal activities that strengthen IGE as a dynamic system. Various kinds of research and development related to the several components of IGE require the cooperative efforts of many personnel and agencies.

The staff of the local school continuously conducts evaluative research when implementing IGE. School districts and state education agencies evaluate their IGE programs. Development and refinement of the specific components of IGE and of other educational systems and products require the specialized contributions of persons in colleges and universities, research and development centers, regional educational laboratories, state educational agencies, and other nonprofit and profit organizations. Continuing research and development are therefore needed to ensure a higher quality of education generally, as well as through IGE.

Personnel Roles in Multiunit IGE Schools[2]

Implementation of the major components of IGE requires substantial change in role expectations and behavior of personnel in the local school, for multiunit organization changes the major responsibilities of each staff member. Every person in the organization fills an important role, and each role has certain associated expectations which must be understood and internalized. This form of organization, as shown in Figure 1.2, is central to assigning authority, clarifying role responsibilities, determining processes, and evaluating behavior in the IGE school.

The multiunit organization creates the new role of unit leader and gives new depth and meaning to the roles of superintendents, principals, teachers, and other personnel. The provisions made for intra- and interunit planning foster participation in decision making and the assumption of responsibility for implementing decisions and evaluating educational outcomes. The multiunit structure was designed to increase interpersonal and group interaction within the school and to pave the way for a more fruitful relationship between the school and its larger environment.

Personnel roles in the multi-unit IGE school are (1) complementary, (2) flexible, and (3) differentiated (Getzels, Lipham, & Campbell, 1968). To insure that roles are complementary they must be interdependent; each role derives its meaning from related interlocking roles within the organization. Indeed, the rights of one role become the obligations of the other, and the expectations for the first role form the duties of the second. The multiunit school organization pays attention to complementarity by defining the major responsibilities of each role in terms of mutual expectations among interlocking roles. This interdependence of roles facilitates shared decision making at all levels of the organization.

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[2] Portions of this section are drawn from: J.E. Walter and J.M. Lipham, Implementing the Multiunit Organization, in J.M. Lipham and M.J. Fruth, *The principal and Individually Guided Education*. Reading, Massachusetts: Addison-Wesley, 1976, pp. 38-47.

Flexibility demands that the roles of personnel are qualitatively and quantitatively different from those in the traditional school. The qualitative change is one of emphasis. For example, the IGE principal is expected to be involved in planning, implementing, and evaluating the instructional program to a greater extent than the principal would be in a traditional school. As for quantitative change, the IGE principal should be able to meet more often with small groups of teachers for sustained periods of time than the non-IGE principal.

Role differentiation in the multiunit school organization means that the division of labor is based on abilities, interests, and preparation. For example, no teacher is expected to be proficient in teaching all the curricular and instructional areas. The following paragraphs describe the major expectations held for the roles of the IGE staff teacher, unit leader, principal, and superintendent in schools implementing IGE.

The Staff Teacher

The major elements of the teacher's role in an IGE school include planning and working cooperatively with other members of the I & R Unit and teaching various groupings of children rather than a fixed number. Teachers may also serve on the SPC to articulate instructional concerns at the district level. The staff teacher performs unique functions related to each component of IGE.

The teacher is expected (1) to provide an appropriate instructional program for the individual student in cooperation with other staff members; (2) to develop and clarify instructional objectives, design and implement a program based on the assessment of each child, and then continually evaluate both the child's progress and the instructional program; (3) to achieve objectives by appropriately utilizing independent study, one-to-one, small-group, class-size, and unit-size grouping modes; (4) to plan and work cooperatively with resource teachers and other specialized personnel to integrate their efforts into the instructional program; (5) to work closely with instructional aides or secretaries who perform routine supportive instructional services; and (6) to participate actively in both inservice and preservice staff development programs.

The teacher also serves as adviser to a designated number of students in the unit, working closely with and reporting to parents regarding their student's needs, progress, and achievements. The teacher also helps parents increase their understanding of and involvement in the school's program.

The Unit Leader

The unit leader, the only new role created in the multiunit organization, has three major responsibilities: (1) to serve as a member of the IIC (and, perhaps, the SPC); (2) to provide leadership to the I & R Unit; and (3) to teach. The main responsibilities are at two levels of the multiunit organization, the IIC and the I & R Unit, and the unit leader serves as the link between them. As a result, vertical communication channels remain open so that decisions made at each level reflect the information and concerns of the other. As a member of the IIC, the unit leader works with the principal and others in fulfilling all of the designated functions of the IIC.

As head of the I & R Unit, the unit leader is not an administrator but the leader of the unit. The unit leader is responsible to the principal for planning and implementing the unit's instructional program and other activities. The unit leader seeks to maximize staff involvement so that each teacher in the unit can share fully in decision making. Inservice training and professional assistance to the unit staff are continuing responsibilities of the unit leader.

Although functioning both as a member of the IIC and as leader of the unit, the unit leader is still primarily a teacher. As a teacher, the unit leader may have direct contact with students up to 80 percent of the typical school day. To fulfill the responsibilities associated with instructional improvement and staff development successfully, the unit leader should have some released time from teaching duties. Because unit leaders have expanded responsibilities, they often receive higher compensation than the regular staff teachers.

Due to the major responsibilities of the position, several personality characteristics and professional experiences should be considered when selecting unit leaders. The unit leader must have had considerable experience as a teacher—three years as a minimum, preferably in a team teaching situation. Unit leaders should also possess positive attitudes toward change. Since the implementation of IGE requires adaptive behavior, the unit leader should be flexible and inventive. Because the role emphasizes coordination, the unit leader must be skilled in recognizing and using the capabilities of all personnel in the unit. Because the role is a leadership position, the unit leader should be skilled in supportive and participative leadership behavior. And because the role is a linking role, the unit leader must be able to communicate and interact effectively with people at all levels both within and outside the school. Above all, the unit leader is a teacher and must exemplify the best in appropriate and effective teaching behavior.

The School Principal

In the IGE school the principal's role is changed in both of its major dimensions, leadership and administration (Lipham, 1964). In leadership, the IGE principal has a reduced span of control and shares decision making with the IIC. Therefore, the principal is able to devote sustained and meaningful attention to the instructional program. The principal's major instructional leadership responsibilities include formulating schoolwide objectives, initiating the system of instructional programming, coordinating staff development programs, supervising preservice teacher education programs, and coordinating research and development activities.

In fulfilling administrative responsibilities, the principal must provide conditions essential for staff members to carry out their instructional responsibilities. The principal must select, supervise, and evaluate educational personnel; obtain and administer resources; and relate effectively to students, staff, the central office, superintendent, and board of education, as well as to parents and other citizens.

In staffing the IGE school, the principal is responsible for recruiting, assigning, supervising, and evaluating all certificated and noncertificated personnel. When choosing personnel the principal must recognize that the units should be staffed by people who wish to teach in such a setting. The principal must support teachers who have no previous experience in cooperative planning so that they can develop into effective unit members. The principal works closely with the IIC and the central office on selecting, assigning, evaluating, and transferring of staff. Another responsibility of the principal, in cooperation with the IIC, is initiating, planning, and implementing the total staff development program in the local school.

The principal chairs the IIC and works closely with its members to formulate the school's educational objectives and develop the broad outlines of the school's instructional program. The principal also meets as necessary with I & R Unit staffs and serves as a resource person in solving persistent and perplexing instructional and operational problems.

The professional preparation required of the effective IGE principal includes successful teaching experience—if possible as a member of a teaching team or as a unit leader—and graduate preparation which incorporates study in organizational theory, human learning and development, staff personnel, instructional leadership, and research. The requisite personal characteristics include (1) commitment to the career of principal as demonstrated by efforts to expand understanding and skill in communicating, planning, organizing, evaluating, and reporting educational activities; (2) demonstration of instrumental, supportive, and participative leadership with the school staff and others; and (3) willingness to foster change and innovation, share authority and responsibility, involve others in decision making, and assist them in achieving both organizational and individual goals.

The Superintendent of Schools

The major responsibilities of the superintendent of a district implementing IGE are to support educational change and to evaluate the progress of implementation. The superintendent is responsible for establishing the SPC or a similar organizational arrangement at the district level, since school board and central office support must be provided for IGE schools. If the superintendent cannot chair this committee, then he or she should designate another appropriate member of the central office staff to do so.

To support the implementation of IGE, the superintendent must understand its concepts, components, and practices. It is vital that the superintendent spend time developing an understanding and appreciation for the potential of IGE. To pave the way for implementation, the superintendent may need to secure necessary changes or provide for adequate flexibility in school district policies and procedures. Changeover demands that important constituencies be informed, and may require negotiations with professional organizations, the board of education, and community groups.

In the changeover to IGE, the superintendent and the SPC play an important role in protecting the efforts of the IGE staff from unwarranted attacks which any innovative program may incur simply because it is new or receiving attention. Requirements for implementing IGE include securing appropriate human resources, providing instructional facilities and materials, and conducting relevant research and development. The superintendent must also ensure that appropriate evaluation occurs at each stage of the implementation process so that any needed corrective actions can be taken promptly. Finally, all community members must understand the extent to which the IGE program is effective and compatible with district program emphases.

Changes in the roles of the school superintendent, principal, unit leader, and staff teacher received major attention in our studies of administrative and staff relationships in multiunit IGE elementary schools.

Studies of the Multiunit IGE School

Research conducted at the R & D Center regarding administrative and staff relationships consisted initially of empirical studies that compared IGE with non-IGE schools. Subsequently, the studies focused specifically on administrative and staff relationships in IGE schools only, primarily utilizing on-site interviews and observations in the comparative case study mode. The research efforts fell into four broad theoretical domains including change theory, organizational theory, leadership theory, and decision theory.

Since IGE was rapidly adopted in elementary schools throughout the nation, several researchers were concerned with IGE as an educational change. Problem-solving, social interaction, research-development-diffusion, and linkage theories of change (Paul, 1977) were utilized. These studies sought to identify factors which led to the diffusion, adoption, and institutionalization of IGE. Attention also was given to identifying and assessing the educational linkages which facilitated the changeover process. The studies of IGE as an educational change are reported in the next chapter.

As indicated previously, the multiunit form of school organization represents a major change in the structure, roles, processes, and outcomes of the school. Social systems theory (Getzels, Lipham, & Campbell, 1968) and axiomatic organizational theory (Hage, 1965) provided the frameworks for analyzing the multiunit school organization at teaching-learning, schoolwide, and district levels. Chapter 3 includes studies of the multiunit school organization.

Several researchers examined leadership and its crucial role in the successful implementation of educational change. Their work is synthesized in Chapter 4. Alternative theories of leadership (Lipham, 1973) were used to study leadership behavior—particularly of principals and unit leaders in IGE elementary schools.

Appropriate involvement in making educational decisions is basic to the success of any school. Several studies, therefore, were conducted concerning content, processes, and participation in educational decision making. The theoretical approach to analysis of educational decision making as a rational process (Lipham, 1974) was used. Particular attention was given to analyzing decision making schoolwide in the IIC, and in the I & R Units in IGE elementary schools. These studies are included in Chapter 5.

Each chapter which reports research follows a similar format. First, the major theoretical models which guided the studies are summarized and referenced. Then, the several studies are synthesized in terms of selected significant findings. Next, the major implications of the findings for improved practice are traced. Finally, some directions for further fruitful research are suggested.

This monograph concludes with a brief look toward the future, examining IGE in terms of its impact on theory and practice regarding educational change, organizational structure, leadership, and decision making in education.

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Chapter II

IGE AS AN EDUCATIONAL CHANGE

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and
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The diffusion and adoption of the multiunit IGE elementary school has been cited as one of the major educational changes in this century (Chase, 1977). The purpose of the research reported in this chapter is to examine IGE as an educational change.

The studies conducted at the R & D Center concerning the diffusion and adoption of IGE used an eclectic approach to theories of educational change. A brief discussion of four of these general theories of change introduces this chapter. Then, the phases that are recommended for the implementation of IGE are outlined. The major part of the chapter presents the findings from studies by Goodridge (1975), Howes (1974) and Paul (1974) who examined the implementation of IGE. The chapter concludes with some practical implications for implementing major innovations and suggestions for further research on educational change.

Theories of Educational Change[1]

Several general theories of change helpful to the educator have been proposed. These include the interaction theory, the research-development-diffusion theory, and the linkage theory of change—all of which are useful in understanding the dynamics of the change to IGE.

The Social Interaction Model of Change. The social interaction model of change emerged from early research on the diffusion of agricultural innovations (Ryan & Gross, 1943). The social interaction model emphasizes (1) communication channels and messages for diffusing innovations, (2) interpersonal influence patterns leading to the adoption of innovations, and (3) stimuli for adoption which originate outside of the adopting system. Four stages are part of the model: (1) knowledge of the innovation, (2) persuasion leading to the formation of attitudes about the innovation, (3) decision about adoption or rejection of the innovation, and (4) confirmation from peers that the decision to adopt or reject was a sound one.

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[1] Portions of this section are drawn from: D.A. Paul, Change processes at the elementary, secondary, and post-secondary levels of education. In N. Nash & J. A. Culbertson (Eds.), *Linking processes in educational improvement.* Columbus, Ohio: University Council for Educational Administration, 1977, pp. 15-81.

The major activities of the social interaction model involve conveying information about innovations through face-to-face contact, print, and other media. The extent of two-way communication is not necessarily that important, but frequency of communication between potential users of the innovation is a major consideration. Frequency of communication generally increases during the initial interest period, but after a decision is made to use the innovation, the frequency usually decreases. Examples of influences of the social interaction model are: (1) financial or organizational support to establish outside contacts; (2) opportunities for traveling, attending conferences, and buying journals; (3) a cosmopolitan orientation; (4) time to talk with friends and colleagues, (5) funds to purchase products; and (6) proximity to sources of new ideas.

Because the characteristics of the potential user of the innovation and the characteristics of the innovation itself are important influences, they are key concepts in the social interaction model of change. Paul (1977) stated,

> The innovations with which the social interaction model usually deal tend to be observable, technological, and susceptible to evaluation. Proponents of the social interaction approach would consider adoption (the decision to use an innovation) as the major change effect.

The Problem-Solving Model of Change. The problem-solving model of change grew out of work on group problem solving and interaction processes, such as sensitivity and T-group training, and organizational development approaches. This theoretical model features the concepts of user centeredness and user diagnoses of problems with an emphasis on building user problem-solving capability.

There are four basic stages in the problem-solving model of change. First, the members of an institution diagnose problems within their organization, often with the assistance of outside facilitators. Next, those same members seek alternative solutions to the diagnosed problems. A particular solution is chosen from a list of possible alternatives generated by organizational members. If this solution appears promising, it is then implemented. Early proponents of this model of change include Lippitt, Watson, and Westley (1958), Watson (1967), and Bennis, Benne, and Chin (1969).

The major influences on the problem-solving approach include: (1) norms and organizational support for problem solving; (2) effective leadership for initiating and maintaining problem solving; (3) staff perceptions of the legitimacy of a problem-solving approach; (4) open-mindedness of staff; (5) sufficient time, funds, and absence of controversy; and (6) adequate space for staff to meet and use the problem-solving approach.

The Research-Development-Diffusion Model of Change. The originators of the research, development, and diffusion model of change (Clark & Guba, 1972; House, 1972) claim that the process they described was not meant to be a model. Nonetheless, it is often referred to as such. This model distinguishes three phases in the change process. First, basic research on a given topic is conducted, followed by applied research. Second, findings from this research serve as a framework for the development of a new technique, product, or design for improved practice. Third, the development is produced and then disseminated to a wide audience that receives assistance in installing it (Clark & Guba, 1972; Guba, 1968).

Examples of influences in the research-development-diffusion approach include: (1) cooperative institutional arrangements between developers, disseminators, facilitators, and users; (2) leadership which encourages the utilization of research; (3) R & D products perceived as legitimate solutions to actual problems; (4) attentive and receptive audiences for messages from developers; (5) time to discover and implement new products; (6) funds for learning about and purchasing new products; and (7) community support for change.

The Linkage Model of Change. The linkage model of change is a generically labeled model which is the most recent and probably most popular change model in education today. An early proponent and user of the term "linkage" in education was Bhola (1965). Havelock (1969) and Havelock and Havelock (1973) are also widely recognized as developers of this model.

The linkage model emphasizes establishing communication networks between sources and users of innovations via an intermediary facilitating role, either a linkage agent or agency. To some extent, the linkage model incorporates concepts from the social interaction, problem-solving, and research-development-diffusion models. Similar to the problem-solving approach, the linkage model states that the needs of potential users of an innovation should be identified by an intermediary agent. As with the social interaction model, the linkage model suggests that communication patterns should be established. Finally, the linkage model parallels the research-development-diffusion model in that it emphasizes the transmission of new knowledge and innovations from their source to potential users.

Major impediments to successful linkage include: (1) incompatible language, values, and reward systems that separate researchers, linkers, and users; (2) weak institutional support, security, and recognition for linking agents; (3) substantial imbalance between the numbers of users and the number of linkage agents; (4) demands on linkage agents to possess both substantive and change-process competencies; (5) organizational structures and arrangements which limit the time available for linkage agents to interact with users; (6) insufficient formal training or legitimation of linkage agents; and (7) geographic limitations on the interaction between researchers, linkage agents and users. Even so, this model possesses power and parsimony for analyzing educational change.

The Center's recommended implementation strategy for IGE used concepts from each of these four major theoretical models of change.

The Implementation Model for IGE

In 1971, the multiunit form of elementary school organization, developed at the R & D Center, was selected by the United States Office of Education for nationwide implementation. To implement this and other IGE components, the staff of the Center (Klausmeier, 1971) developed and utilized an implementation strategy consisting of five phases: (1) awareness, (2) commitment, (3) changeover, (4) refinement, and (5) renewal (Klausmeier, Karges, & Krupa, 1977). Brief descriptions of these phases follow.

Awareness Phase. In this phase, school district officials, building principals, representative teachers, and other people demonstrate understanding of IGE as a system of seven interrelated components, its merits as an alternative to both age-graded and departmentalized schooling, and the recommended procedures and requirements for a school to change to IGE.

Commitment Phase. School district officials, board members, principals, and the staff of the school that intends to change over to IGE, as well as parents and other citizens of the attendance area, show their understanding of IGE concepts and practices and formally commit themselves to making the changeover to IGE in a particular school.

Changeover Phase. The multiunit organizational and administrative arrangements, comprising the I & R Units, the IIC, and the SPC are formed and begin to function effectively, creating an intraorganizational facilitative environment for the students' educational and personal growth, and for the professional and personal development of the staff. Instruction that both meets the needs of individual students and contributes to attaining the school's educational objectives is carried out in accordance with the Instructional Programming Model.

Refinement Phase. IGE practices in local schools are refined through the cooperative efforts of personnel in the school, the district, and the state agencies and institutions responsible for public education. The needs of IGE schools are assessed in connection with all seven components of IGE. The necessary consultative assistance, credit courses, and noncredit staff development programs are provided.

Renewal Phase. The responsible educational agencies and teacher institutions of a state, through their state IGE coordinating committee, cooperatively develop educational renewal plans for the state, school districts, and local schools.

Through utilization of the foregoing five-phase model by the staff of the R & D Center, IGE was rapidly diffused, adopted, and institutionalized in elementary schools. Several studies were conducted to investigate the diffusion of IGE.

The Diffusion of IGE

What factors contributed to such immediate and widespread diffusion of IGE throughout the nation? Paul (1974) sought the answer to this question by examining the linkages between and among the following educational agencies: the Wisconsin R & D Center, teacher education institutions, state departments of education, and local IGE schools. Through use of Havelock's (1971) linkage theory of change, diffusion was examined in terms of the resource capabilities, types of activities, modes of interaction, and frequency of activities carried out among the four kinds of agencies.

Three states were involved in the study. Each had negotiated an implementation contract with the R & D Center, established the position of state coordinator of IGE implementation, conducted at least one teacher education institution program for training and/or assisting in IGE implementation, and established a core of operating multiunit IGE elementary schools.

Paul held semistructured interviews with principals, unit leaders, and teachers in IGE schools to obtain substantive descriptive responses to the operationalized concepts of linkage, structure and capability. Data treatment was structured according to each concept and descriptive statistics were used to summarize the responses.

Paul's major finding was that the administrative and organizational structure and the human, material, and resource capabilities of the agencies contributed to the linkages that accounted for the rapid diffusion of IGE. Specific findings of Paul's study were:

1. The most powerful single influence on the diffusion of IGE was the teacher education institution.
2. Teacher education institutions were often complemented, supported, and reinforced by state education agencies.

3. Linkage of skilled human resources was significant in the widespread diffusion of IGE because IGE required the relearning of staff roles, attitudes, and behaviors.

4. The linkage between local schools and teacher education institutions provided the arrangements and processes for the relearning of role expectations and responsibilities. Student teaching and internship programs were a particularly strong and productive linkage.

5. The linkage between local schools and state departments of education was somewhat weak and could be improved by better coordination, appropriate frequency of contact, and wiser use of resources.

Local school personnel varied in their perceptions of the ideal amount of linkage activity. In some cases school staffs felt that there was not enough activity and developed a feeling of being "let down," while in other schools too much linkage activity resulted in the staff's feeling "invaded by outsiders."

In general, the linkage theory of change was very useful in accounting for the widespread diffusion and adoption of IGE. Other studies examined additional factors which led to the adoption of IGE.

Factors Affecting the Adoption of IGE

Howes (1974) research focused on identifying specific factors related to the widespread adoption of IGE. To collect data for the study, she designed and distributed an organizational change questionnaire concerning numerous change variables to a representative national sample of over 2,000 staff teachers, unit leaders, principals, district coordinators, and superintendents in multiunit IGE schools and school districts. Factor analysis was used to identify variables affecting the adoption of IGE. Item analysis and multiple regression were used to identify specific change variables directly related to the adoption process.

In general, Howes found the successful adoption of IGE to be directly and systematically related to the quality, clarity, and manageability of IGE as a system (this finding relates to the research-development-diffusion theory of change); the clearly perceived advantages of IGE (this finding relates to the social interaction theory); the degree to which individuals were informed about and able to communicate with others involved in making the change (this relates to the problem-solving theory); and the extent to which individuals were involved in and supported during the change process (this relates to the linkage theory of change).

The people typically involved in local school districts in implementing IGE included superintendents, district coordinators, principals, unit leaders, and staff teachers. Howes found that each of these groups was differentially involved in the change process. The following are some highlights of each group's role in the various phases of implementation. Superintendents were not generally viewed as active change agents, but rather as informed and influential people helpful in fostering a climate for the awareness of change within the school district.

District coordinators, particularly in districts with more than four or five schools, directly affected the success achieved in the implementation of IGE. Staff teachers and unit leaders particularly valued the contributions of district coordinators in supporting the innovation during the changeover phase.

The principal occupied a crucial position in all phases of implementing IGE. During the awareness, commitment, and changeover phases, the principal functioned as both the primary change agent and as the administrator of change. Principals felt that while they had the support of their unit leaders and staff teachers, they could have received stronger support from the superintendent and district coordinators during the commitment and changeover phases. Principals who used shared decision-making structures and processes were viewed as effective change agents.

Although unit leaders occupied a new role and had diverse expectations placed on them, they were also influential, especially in the changeover phase of implementation. During the demanding changeover year, their supportive and participating leadership was particularly valued by teachers.

Staff teachers, the actual users of IGE, were directly and significantly involved in all phases of implementation. Of all respondent groups, staff teachers were generally the most positive about the attributes of IGE. The fact that the staff teachers had such positive attitudes concerning IGE confirmed the findings of other researchers (Hall, 1974; Havelock, 1969; Rogers & Shoemaker, 1971) that unless the individual user views the change program as desirable change will not take place. According to Howes, the positive feeling of teachers toward IGE was perhaps the major reason why the change was so successful.

Persons Influencing the Adoption of IGE

Who are the individuals who made the initial decision to adopt IGE and what influences led to that decision? Goodridge (1975) sought the answer to this crucial question by conducting visits to eight geographically diverse schools which had adopted IGE in the preceding twelve-month period.

To collect data, he used semistructured, open-ended interviews with superintendents, coordinators, principals, unit leaders, and teachers. Self-perceptions and perceptions of others' influences concerning the adoption of IGE were obtained by asking respondents to identify key decision makers. The data were categorized, coded, and tabulated by content analysis. Some of the major findings of this study were:

1. Principals were the major decision makers in the decision to adopt IGE. In the majority of schools, this decision was shared with unit leaders and staff teachers.

2. Superintendents, central office personnel, and parents were minimally involved in the decision to change to IGE. Moreover, school boards often let others make decisions about the adoption of educational programs if no additional costs were involved.

3. The most influential and successful external change agents were teachers from other IGE schools who were viewed as credible. Visits by staff members to other IGE schools had a very positive effect on the decision to adopt IGE.

4. IGE facilitators were sometimes perceived as making unreal, idealistic awareness presentations, and their credibility was often challenged. Some of these external change agents were perceived as actually dysfunctional.

5. The major reason for adopting IGE was that it provided for instructional programming for the individual student. Other reasons for adoption, however, included keeping up with current trends by being an early adopter or receiving additional funding because of the IGE program.

6. Information about IGE and its major components during the awareness and commitment phases of change appeared adequate to respondents when presented, but was seen as insufficient later in the changeover phase. The inservice training programs and curricular development activities that were needed during the changeover phase were seldom adequately provided.

From the foregoing findings several implications can be drawn for enhancing the implementation of change in local schools.

Practical Implications Concerning Change

Implications drawn from the studies of IGE as an educational change can strengthen the efforts of principals, teachers, and others in the local school and enhance the ability of state departments of education, teacher education institutions, and other agencies to improve educational practices.

The role of the principal is a crucial one. Probably no change of any substantial magnitude can occur in a school without effective leadership by the principal during all phases of the change process (Lipham, 1977). During the awareness phase, the principal is the most important internal linkage agent, serving as initiator, stimulator, communicator, and influencer of change so that the perspectives of the staff and others can be broadened. Working with key teachers, the principal must coordinate the essential awareness activities.

In the commitment phase, the principal is instrumental in shaping the decision to adopt by stimulating the enthusiasm of the staff, by securing the district's commitment of human and material resources, and by informing and appropriately involving parents, citizens, and others about the need for change and the potential benefits of the proposed program. Apparently, a few principals still tend to think that they can "go it alone," and do not adequately inform the staff about the magnitude of the change being attempted. Still others tend to stress the autonomy of "me and my staff," and survive initially in their change efforts only through the benign neglect of the school district and the ignorance of parents and citizens.

In the changeover phase, the role of the principal shifts somewhat from initiator to coordinator. During the changeover year, heavy demands are placed on the principal for instrumental and supportive leadership behavior. In the following years of refinement and renewal, the leadership cycle returns to the need for emphasis on stimulative and participative leadership on the part of the principal.

Teachers as decision makers and as implementors of a change must be adequately informed about the change and be appropriately involved in all phases of the implementation process. To facilitate communication and involvement, the principal must engage staff teachers in activities to increase their understanding, skills, and attitudes regarding the innovative program. Visits made to other schools to observe the program in operation are particularly productive. Moreover, teachers from other successful schools should act as consultants to the staff considering the change. In short, teachers can be effective educational linkage agents, but are often underutilized.

The success or failure of diffusion and adoption of change by the local schools will depend upon the linking agencies having explicitly defined roles and the resources necessary to perform their responsibilities effectively. State education agencies should strengthen their supportive linkage with research and development centers, teacher education institutions, and local schools. The perspective of the state education agency, its funding capability, and its experience in coordinating state educational programs make it the logical agency for facilitating interorganizational linkages. Funding innovative programs in schools and teacher education institutions, providing consultants or local staff development efforts, and increasing interorganizational communications are linkage functions that need improvement by state education agencies.

A strong linkage between teacher education institutions and local schools is one of the most effective means for educational change and must be maintained, even in an era of declining school and college enrollments. The linkage relationship between teacher education institutions and the schools is facilitated by the placement of student teachers in the schools. Teacher education institutions, however, should strengthen their "outreach" activities by conducting credit and noncredit inservice programs, providing consultation, and collaborating on research problems and issues with local school staffs.

The typical twenty-year lag between knowledge production in education and its utilization in the schools has long been decried (Mort, 1953). The fact that this lag in the case of IGE did not occur is quite unusual, perhaps because the Wisconsin R & D Center engaged in a wide variety of linkage roles and activities. One-day, three-day, and one-week awareness conferences on IGE were conducted in state departments, regional agencies, districts, and schools in all parts of the country. Principal-unit leader workshops were held in local schools to obtain commitment, improve skills, and facilitate changeover. Leagues of local IGE schools were formed. Credit and noncredit courses and seminars and inservice institutes were established in several colleges and universities. State and district IGE coordinators were appointed and state networks formed. Results of research and practice were disseminated widely in national publications and presentations. How did all of this occur despite limited, short-term funding for dissemination? Evidently, further research is needed on how IGE, as well as other substantial educational innovations, were implemented. In this way the linkage relationships that have served to influence and improve educational practice will be better understood.

Necessary Research About Change

Excellent studies usually identify more pressing problems than they solve. The studies of IGE as an educational change revealed several topics which require further fruitful inquiry, some of which follow:

1. The organizational structure, human and material resource capabilities, functions, and processes of educational linkage agencies—particularly state departments of education, colleges and universities, and research and development centers.

2. The extent and effects of agreement on interorganizational linkage roles in terms of such variables as frequency of contact and interaction, processes used, and services provided.

3. The generalizability of the five-phase IGE implementation model to other major educational innovations.

4. The factors responsibile for the positive perceptions of IGE from teachers and others as an educational change.

5. The role responsibilities and involvement of school board members, the superintendent, central office personnel, principals, unit leaders, teachers, parents, and citizens in each phase of the implementation process.

6. The adequacy of information provided about the change program prior to adoption, inservice programs and staff development activities during the changeover year, and programs and activities required to sustain and renew the change effort.

7. The key leadership and decision-making responsibilities required of the principal both as an internal change agent and an external linkage agent (Lipham, 1977) in improving educational practice.

8. The increased use of teachers as educational linkage agents in modeling and legitimizing innovative educational programs.

Summary

This chapter focused on the diffusion, adoption, and institutionalization of IGE as an educational change. First, four theoretical models of organizational change were presented: the social interaction, problem-solving, research-development-diffusion, and linkage models of change. Second, the recommended phases of change for schools implementing IGE were outlined to include awareness, commitment, changeover, refinement, and renewal. Next, some major findings from studies of the diffusion of IGE through interorganizational linkages, the factors influencing adoption, and the persons influencing adoption of IGE were presented. Some practical implications were drawn from the studies to improve the performance of personnel in local schools, state departments of education, teacher education institutions, and other agencies in implementing educational change. Finally, some suggestions were made for research on the implementation of educational innovations. Further research on implementation is needed to increase our understanding of the change process and to improve practice in the schools.

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Chapter III

ORGANIZATIONAL STRUCTURE OF IGE SCHOOLS

James M. Lipham
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The formal role structure of the organization is a powerful predictor of working relationships and on-the-job behavior in the schools. Since the design of the multiunit school organization has changed existing roles and created the new role of unit leader, it is essential to examine the major role expectations held for individuals and groups in the IGE school. It is also important to examine the structural characteristics of the multiunit school organization in relation to significant staff and student outcomes.

Two major theories, social systems theory (Getzels, Lipham, & Campbell, 1968) and axiomatic organizational theory (Hage, 1965), provided the basic frameworks for analyzing the multiunit form of school organization. They are described briefly in the beginning of this chapter. Then, some major research findings are presented regarding role expectations and the effectiveness of school superintendents and SPCs, principals and IICs, and unit leaders and I & R Units. Next, research is presented about relationships of the structural variables to certain significant outcomes in IGE and non-IGE schools. Implications for improved practice and for further research to refine the multiunit school organization conclude the chapter.

Theories of Organizational Behavior

Many theories exist which help to describe and explain organizational role relationships, behavior, and outcomes. In the studies of IGE schools, social systems theory and axiomatic organizational theory were most widely utilized.

Social Systems Theory[1]

Studies of individual and group roles in the multiunit school have drawn heavily upon social systems theory, since the school may be viewed as a dynamic, interactive, social system. The school as a social system may be viewed along two major dimensions. The first is the normative or sociological dimension consisting of the institutional roles and expectations designed to accomplish the goals of the school (Getzels & Guba, 1957). Roles representing dynamic aspects of positions, offices, or statuses within the school are complementary or interlocking and in the IGE school are quite flexible. Roles are defined in terms of expectations which are the normative rights and duties of a role incumbent—principal, unit leader, teacher, student, etc. The role is performed when a role incumbent puts these rights and duties into effect. The extent to which the behavior of a role incumbent is congruent with the expectations held for that role is the measure used when evaluating performance effectiveness.

The second basic dimension of a social system is the personal or psychological dimension. This consists of individual personalities with their unique abilities, interests, and need-dispositions. The IGE school places particular emphasis on this dimension, which is concerned with accomplishment of the goals of the individual. Each role incumbent in the school stamps the role occupied with his or her own personality, which is defined as the dynamic organization of the need-dispositions within the individual that determine one's unique interaction with the environment. These needs, as Murray (1938) described and as Maslow (1954) ordered, are organized hierarchically and patterned horizontally in terms of greater or less priority or potency, so that the satisfaction of a lower order need, such as survival, affects the activation of a higher order need, such as self-actualization. The extent to which the behavior of an individual is congruent with the unique pattern of need-dispositions of the personality is a measure of personal efficiency.

Social behavior within the school derives simultaneously from the normative and personal dimensions. Behavior in a social system is a function of the interaction between a given institutional role, defined by the expectations attached to it, and the personality of a particular role incumbent, defined by need-dispositions. That is, social behavior results from attempts to cope, in ways consistent with the individual's own pattern of needs and dispositions, with an environment composed of patterns of expectations for behavior. The extent to which the demands of the organizational role and the requirements of the individual personality are congruent is a measure of satisfaction—the role "suits" or "fits" the individual, and conversely.

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[1] Portions of this section are drawn from: J. W. Getzels, J. M. Lipham, & R. F. Campbell, *Educational administration as a social process*, New York: Harper & Row, 1968; and from J. M. Lipham, A. M. Holmquist, & K. W. Wright, Developing staff personnel, in J. M. Lipham & M. J. Fruth, *The principal and Individually Guided Education*, Reading, Massachusetts: Addison-Wesley, 1976

The institution and the individual are embedded in a cultural milieu which conditions and shapes both the institutional roles and the individual personalities and thereby influences social behavior. The culture may be described in terms of its prevailing ethos and values. A value is defined as "a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action" (Kluckhohn, 1951). Therefore, the basic values and the educational values held by the community, the staff, the students, and others bear directly on the school and all individuals within it.

The general model of the school as a social system in Figure 3.1 shows the interrelationships of the normative, personal, and cultural dimensions as the primary determinants of social behavior in the school. This model is particularly valuable in assessing role expectations for individuals and groups in multiunit IGE schools. Together with axiomatic organizational theory, social systems theory is helpful in examining relationships between organizational structure and school outcomes.

Axiomatic Organizational Theory

To order the structural and functional relationships within organizations, Jerald Hage, a sociologist at the University of Wisconsin, conceived and proposed a general axiomatic theory of organizations that has generated considerable research regarding the formal organization of the school (Hage, 1965). He outlined eight variables related to organizations—four "means" and four "ends." The "means" are variables within an organization's structure and the "ends" represent performance or outcome variables. In this theory, the structural variables are termed complexity, centralization, formalization, and stratification; the outcome variables are adaptiveness (flexibility), job satisfaction (morale), production (effectiveness) and efficiency (cost). Descriptions of the structural variables used in several studies of IGE schools follow.

Complexity. The complexity of an organization represents the extensiveness and intensiveness of knowledge in the organization and is measured by two indicators, the number of occupational specialties and the level of training of persons in the organization. In the measures of complexity in elementary schools (which sometimes do not have more than a principal, teachers, and perhaps some paraprofessionals), specialists such as counselors,

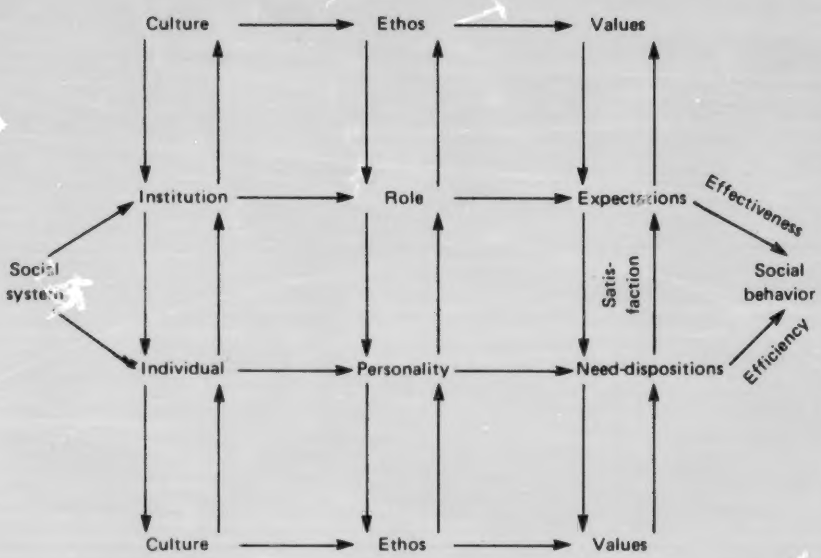
Culture
Ethos
Values
Institution
Role
Expectations
Effectiveness
Social system
Satis-faction
Social behavior
Individual
Personality
Need-dispositions
Efficiency
Culture
Ethos
Values

Figure 3.1. Operational Model of Major Dimensions of Social Behavior.

Adapted from: J. W. Getzels, Conflict and role behavior in the educational setting, in W. W. Charters, Jr., & N. L. Gage (Eds.), *Readings in the social psychology of education,* Boston: Allyn & Bacon, 1963, p. 312; and from J. W. Getzels, J. M. Lipham, & R. F. Campbell, *Educational administration as a social process,* New York: Harper & Row, 1968, pp. 105-108.

psychologists and others who spent regular time in the school were included. School personnel generally had a high degree of initial professional training, supplemented by inservice staff development activities, such as attending workshops and conferences, involvement in professional organizations, and reading current educational literature. Consequently, the researchers gathered information about both preservice and inservice training of the staff.

Centralization. This variable refers to the distribution of power to make decisions and is measured by two indicators, the extent to which organizational members at different levels participate in decision making and the number of content areas in which decisions are made. The lower the proportion of members that participate in decision making and the fewer the areas in which they can make decisions, the higher the centralization of the organization. Questionnaires, interviews, and observations were used to ascertain the level of involvement of teachers and others in making educational decisions.

Formalization. This organizational feature relates to the codification of jobs and to the explicitness with which performance is directed through rules and regulations. The greater the discretion allowed members in performing their responsibilities, the lower the formalization. This variable was usually measured by the extent to which teachers perceived themselves as restricted by rules and regulations in the school.

Stratification. Stratification refers to the extent to which formal and informal rewards are distributed equitably in the organization, as well as to perceived status differences among personnel. The greater the difficulty in earning status or rewards, the more stratified the organization. The indicator of stratification used in the studies was the extent to which teachers felt that other teachers had greater status, prestige, or were even given preferential treatment.

Based on the earlier work of Barnard (1946), Thompson (1961), and Weber (1947), axiomatic theory proposes that the structural and outcome variables are interrelated and an increase in one variable will result in a decrease in other variables; for example, the higher the stratification in an organization, the lower the job satisfaction and morale will be. Although it would be interesting to examine each of the propositions, it is even more instructive to consider two extreme types of organizations suggested by the variables—the organic organization with an emphasis on adaptiveness and the mechanistic organization with an emphasis on production. Each is the converse of the other, as indicated below:

Organic Organization	**Mechanistic Organization**
High complexity	Low complexity
Low centralization	High centralization
Low formalization	High formalization
Low stratification	High stratification
High adaptiveness	Low adaptiveness
Low production	High production
Low efficiency	High efficiency
High job satisfaction	Low job satisfaction

To what extent is the multiunit IGE school organic or mechanistic? How do IGE schools compare with non-IGE schools? Within IGE schools, how effective are SPCs, IICs, and the I & R Units? Which of the structural variables are helpful in predicting certain organizational outcomes in IGE schools? Several studies sought the answers to these questions.

Organizational Role Expectations and Effectiveness in IGE Schools[2]

The research studies of organizational relationships in IGE schools examined role expectations and effectiveness at the three hierarchical levels of the multiunit organization—the superintendent and the SPC, the principal and the IIC, and the unit leader and the I & R Unit.

Expectations and Effectiveness of the SPC

An analysis of the SPC was conducted by Krula (1974) in a doctoral dissertation completed at Northern Illinois University. He examined the extent to which superintendents and other central office administrators, building principals, unit leaders, and teachers agreed about the appropriateness of the performance objectives specified for the SPC in instructional programming, organizational operations, staff development, and home-school-community relations (Klausmeier, Quilling, Sorenson, Way, & Glasrud, 1971). He also assessed the effectiveness of the SPC in meeting expectations. The sample of SPCs analyzed comprised 32 school districts in nine states. Responses to a survey instrument were obtained from 42 superintendents and other central office staff, 82 school principals, and 140 unit leaders and teachers.

In general, substantial agreement was found among the respondent groups regarding the appropriateness of the performance objectives held for the SPC in all four functional categories. Moreover, especially strong sentiments were expressed concerning such operational matters as the need for regular meetings and proper preparation and dissemination of agendas and minutes of SPC proceedings. Other strong feelings concerned substantive issues such as the need for staunch initiatives by the SPC for multiaged grading of students, continuous progress, and other basic IGE concepts and practices.

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[2] Portions of this section are drawn from: J.M. Lipham, H. J. Klausmeier, and J. E. Walter, The multiunit organization, in H. J. Klausmeier, R. A. Rossmiller, and M. Saily (Eds.), *Individually Guided Elementary Education: Concepts and practices*, New York: Academic Press, 1977, pp. 42-44.

The SPC, however, was regarded as less than successful in fulfilling its performance objectives. The SPCs had fulfilled effectively fewer than half of the agreed upon performance objectives. Moreover, several significant differences existed among the three respondent groups regarding the effectiveness of the SPC. Although superintendents and central office personnel perceived the SPC to be more effective than did either principals or unit leaders and teachers, all respondents felt that the high expectations held for the SPC were not being met. The SPC was the weakest link in the multiunit school organization.

Expectations and Effectiveness of the IIC

How effective is the IIC in meeting its performance objectives? An early empirical survey by Smith (1972)and a subsequent comparative field study by Moyle (1977) sought the answer to this question. In Smith's study, IIC members (principals and unit leaders) in 31 IGE schools in two states responded to measures of IIC operation, the principal's leadership behavior (Halpin, 1956) and the IIC members' interpersonal compatibility (Schultz, 1958).

Significant, direct, and positive relationships were found between the perceived effectiveness of the IIC and the following variables: (1) the principal's consideration leadership behavior, (2) the amount of time the IICs spent in meetings each month, (3) the IICs whose members had a preference for interaction with others, (4) the IICs whose members had a preference for close personal relations both toward others and from others toward themselves, (5) the IICs having fewer members, and (6) the IICs in which no one individual was in control.

The purpose of Moyle's (1977) study was to observe and describe the functions, processes, and dynamics of group decision making in the IIC. Field methodology was used to examine eight established IGE schools diverse in location, socioeconomic level, and ethnic composition. Data were collected through interviews, non-participant observations, questionnaires, and written documents, and were analyzed by schools and across schools.

One of Moyle's major findings was that the membership, modes of operation, and functions performed by the IIC differed considerably both from the prototypic multiunit organizational model and from school to school. Even so, in each school the IIC performed significant functions related to the instructional program. Its effectiveness was increased by broadening member understanding of its range of specified functions and by improving administrative arrangements to enhance two-way communication between the IIC and the I & R Units.

As Goodridge (1975) had discerned earlier, Moyle found the leadership role of the principal to be crucial to the effective functioning of the school. In the IIC, the effectiveness of decision making was enhanced when principals struck an appropriate balance between instrumental and participative leadership styles. Even so, some principals persisted in directive leadership behavior. For example, when issues facing the IIC became quite potent and complex, task structuring of IIC agenda items increased as principals felt the need to control the decisions made and the outcomes of those decisions.

Similar to the findings from an earlier empirical study by Nerlinger (1975), Moyle discovered that the unit leader's role, although relatively new, had emerged as a powerful position—particularly in regard to representing appropriately the values and expectations of I & R Unit members. Moreover, the representation function of the unit leader was enhanced when the unit leader was adequately prepared to discuss and defend in the IIC issues of concern to unit members. Effective unit leader representation contributed to the cohesiveness of the IIC by facilitating horizontal and vertical two-way communication. Group cohesion in the IIC increased when there was open two-way communication, when members were satisfied with decision-making processes, and when there was compatibility in personality and teaching philosophy among members. In general, an open, two-way, total interaction style characterized effective communications in the IIC.

Although relationships were strong between the IICs and the I & R Units, Moyle confirmed the earlier findings of Krula that relationships with the school district needed improvement. The general failure of schools to have SPCs or of the existing SPCs to function according to the multiunit model had a negative effect on the IGE program. Moreover, decision making by the IICs in certain curricular and instructional areas was circumscribed because of policies, procedures, and committee structures of the school districts which infringed not only on the IIC, but also on the I & R Units.

Expectations and Effectiveness of the I & R Unit

Evers (1974), Gramenz (1974), Kawleski (1977), and Sheridan (1974), examined the expectations and effectiveness of the I & R Unit in IGE schools. Recognizing that the newly created role of unit leader was central to the effective functioning of the I & R Unit, Sheridan (1974) investigated the extent of agreement among IGE principals, unit leaders, and teachers on expectations held for the unit leader's role in performing and effectively fulfilling unit functions. Tasks typically performed by unit leaders were identified from the literature (Klausmeier et al., 1971) and from practice and were reduced to a survey instrument, the "Unit Leader Role Analysis," which was administered to a sample of 48 principals, 48 unit leaders, and 96 teachers in IGE schools of 32 different districts. From a factor analysis of the data, four major dimensions of the unit leader's role were discovered: intraorganizational relationships, extraorganizational relationships, instructional coordination, and management activities.

In general, there was substantial agreement on the major expectations held for the unit leader's role. The following significant differences, however, possess several implications for improving interpersonal communication and coordination within the IGE school:

1. Principals, unit leaders, and teachers differed significantly in the expectations they held for the unit leader's role on tasks dealing with instructional coordination and intraorganizational relationships.
2. When principals agreed with unit leaders on expectations for management activities, from the unit leader, then the principals rated the unit leaders as effective.
3. When teachers agreed with unit leaders on expectations for instructional coordination from the unit leader, then the teachers rated the unit leaders as effective.

In their studies of organizational relationships in the IGE school, Evers (1974) and Gramenz (1974) constructed and validated an instrument, the *I & R Unit Operations Questionnaire*, to assess the effectiveness of I & R units. In these companion studies, data were gathered from the total professional staffs of 163 I & R Units in 45 IGE schools throughout the nation.

From the literature, a list of 51 performance items for the I & R Unit was developed. A factor analysis of the data revealed that effective I & R Units gave attention to the following important dimensions: the instructional program of the unit, the procedural and substantive organizational operations of the unit, the home-school-community relations of the unit, and the staff development activities of the unit.

Whereas Moyle examined the IIC, Kawleski (1977) conducted a companion study of the functions, processes and relationships of I & R Units in IGE schools. Using field methodology, she observed and examined 16 I & R Units in the same 8 IGE schools studied simultaneously by Moyle.

A major finding of Kawleski's study was that I & R Units were classic organic organizations—high in complexity, low in centralization, low in formalization, and low in stratification. Moreover, group cohesiveness was high in most I & R Units. Unit members felt they derived much benefit from membership in the unit and had a considerable sense of togetherness. They shared in making important instructional decisions, typically using a total interaction communication network.

Two types of group interdependence in I & R Units were identified, planning interdependence and instructional interdependence. Units varied in the amount of interdependence that had developed among unit members. Units with low overall interdependence patterns tended to stress planning rather than instructional interdependence.

Regarding I & R Unit effectiveness, such organizational and personal variables as principal and unit leader behavior, working proximity of unit members, and open and amiable personal relations enhanced I & R Unit functions. Variables such as large class size, inadequate planning time, and forced staff changes hindered I & R Unit effectiveness. In general, however, the I & R Units were found to be an effective structure for shared decision making and implementation.

Organizational Structure of IGE Schools[3]

Studies of the multiunit school examined the organizational structural variables of complexity, centralization, formalization, and stratification in relation to teacher satisfaction, adaptiveness of the school, teacher motivation, and student outcomes in IGE and non-IGE schools.

Organizational Structure and Teacher Satisfaction

An insightful analysis of the overall organization and operation of some of the first multiunit IGE schools to be established was conducted by Pellegrin, Slagle, and Johansen (1969) during the 1967-68 school year. In this comparative study, interview and questionnaire responses were obtained from the professional staffs of paired IGE and non-IGE schools in three different school districts. The interdependence of relationships, division of labor, decision-making processes, and satisfaction of teachers in IGE and non-IGE schools were analyzed and compared.

To identify interdependence relationships, two basic questions were asked: (1) "List the names of those persons both within and outside your school (other than students) upon whom you depend *most heavily* in order to perform your job effectively"; and (2) "Who are the persons listed above, if any, whose job is so closely related to yours that you believe the two jobs must be performed collaboratively in order for either of you to perform your work effectively?"

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[3] Portions of this section are drawn from: J.M. Lipham, H. J. Klausmeier, and J. E. Walter, The Multiunit Organization, in H. J. Klausmeier, R. A. Rossmiller, and M. Saily (Eds.), *Individually Guided Elementary Education: Concepts and Practices*, New York: Academic Press, 1977, pp. 42-44.

The major finding from a sociometric analysis of the data from teachers was that interdependence relationships in the multiunit IGE schools differed substantially from those in the non-IGE, control schools. In the IGE schools there were several interaction clusters, with the members of each I & R Unit depending heavily on each other for the successful performance of their work. By contrast, in the non-IGE schools there were few interdependence relations among teachers; instead, the teachers were heavily dependent upon the principal. Moreover, greater variability was found in interdependence relationships in the IGE as compared with the non-IGE schools.

Responses of principals to the basic questions revealed IGE principals to have essential relationships with a greater number of teachers than did the non-IGE principals. The few essential relationships of non-IGE principals typically were limited to the school secretary, the custodian, and, occasionally, a teacher.

Regarding the division of labor, Pellegrin, Slagle, and Johansen found considerable specialization in multiunit schools in teaching in individual, small-group, and large-group settings. Some teachers were found to be serving as expert advisers to their colleagues and teachers assumed special and flexible assignments in planning and conducting the instructional program.

To obtain information on decision-making processes in the school, each teacher was asked to specify his or her role in making various types of instructional decisions on a scale ranging from (5) "complete autonomy in making the decision" to (1) "no voice in making the decision." In the non-IGE schools, decisions affecting instruction were found to be in the prerogative mainly of two individuals—the teacher, serving as the primary decision maker, and the principal, providing advice or setting the limits within which the teacher had discretion. By contrast, in the IGE schools few teachers saw themselves as making decisions unilaterally—instead, decisions were shared with others in a group decision-making mode.

In examining the organizational-individual relationship, Pellegrin, Slagle, and Johansen, found teacher satisfaction to be consistently higher in IGE than in non-IGE schools on the following items: (1) progress toward one's personal goals in present position, (2) personal relationships with administrators and supervisors, (3) opportunity to accept responsibility for one's own work and the work of others, (4) seeing positive results from one's efforts, (5) personal relationships with fellow teachers, (6) present job in light of one's career expectations, and (7) availability of pertinent instructional materials and aids. Moreover, teachers in the IGE schools perceived their environment as being more free, less rigid, and more open to experimentation than did teachers in the non-IGE schools.

Many of the foregoing findings were confirmed in a recent study by Mendenhall (1977) who examined the relationship of the structural aspects of the organization to the organizational outcome of teacher job satisfaction. Using questionnaires, she gathered data on site from the principal, unit leader, and staff teachers in a randomly selected I & R Unit in each of 41 IGE elementary schools. The structural dimensions of complexity, centralization, formalization, and stratification were assessed. Total and facet job satisfaction were measured in terms of teacher satisfaction with administrators, co-workers, career future, pupil relations, and the like.

A major finding of Mendenhall was that the lower the degree of stratification and formalization in IGE schools, the higher the level of teacher job satisfaction. These findings were congruent with the propositions of axiomatic organizational theory that high formalization and high stratification relate negatively to teacher job satisfaction. Mendenhall noted that in schools sometimes informal and subtle rewards can be used to create an informal status system, and that if these rewards are distributed only to a select few, then stratification will increase and job satisfaction will decrease. Regarding formalization, she noted that educators are members of a profession and, as such, have internalized certain norms; hence there appears to be little need for highly codified job descriptions, rules, and regulations—particularly in IGE schools.

Organizational Structure and Adaptiveness

A major study of the relationship between the overall structure of the school and its adaptiveness in utilizing innovative instructional and learning activities was conducted by Walter (1973). Using axiomatic organizational theory, he compared IGE and non-IGE schools in terms of their organizational structures and outcomes. From a population of 1,000 multiunit IGE schools in 14 states, a random sample of 20 IGE schools was selected and matched with a sample of non-IGE schools of similar size and socioeconomic levels in the same school districts. Data were gathered from questionnaires distributed to all principals and 10 randomly selected teachers in each school.

In general, Walter discovered a significant and direct relationship between the structural properties of the organization and organizational adaptiveness. Specifically, it was found that the multiunit IGE schools were significantly less centralized in their decision-making processes than were the non-IGE schools. Moreover, the IGE schools were significantly more innovative and adaptive in terms of both teacher activities and student activities than were the non-IGE schools.

Organizational Structure and Teacher Motivation

What is the relationship between organizational variables and teacher motivation to perform? Herrick (1974) examined this issue by assessing organizational structure in terms of the axiomatic theory of organizations and teacher motivation in terms of expectancy theory (Porter & Lawler, 1968; Vroom, 1964). Expectancy theory states that motivation to perform is a function of the probability of receiving a particular reward and the importance of the reward to the individual. The data for analysis were provided by 15 teachers in each of 72 randomly selected Wisconsin elementary schools (34 IGE and 38 non-IGE).

In both IGE and non-IGE schools, findings were consistent with axiomatic organizational theory; the lower the degree of centralization in decision making and the lower the degree of stratification of social relationships, the higher the degree of teacher motivation. Moreover, the IGE schools were found to be less centralized in their decision-making processes and less socially stratified, and had more highly motivated teachers than did the non-IGE schools.

Organizational Structure and Student Outcomes

What is the relationship of organizational structural variables to cognitive and affective student outcomes? Bocian(1976) and Sigurdson (1976) examined this question in IGE schools, whereas Nelson (1972) compared IGE and non-IGE schools.

Utilizing the same sample of IGE schools examined by Mendenhall, Sigurdson and Bocian administered on site the I & R Unit Operations Questionnaire to teachers and obtained measures of student achievement in reading, mathematics, and student self-concept scores. In keeping with axiomatic organizational theory, Sigurdson found teachers' perceptions of I & R Unit effectiveness not to be related to student achievement. Bocian, however, found teachers' perceptions of the substantive and procedural operations of I & R Units to be significantly related to student self-acceptance and student-teacher affiliation.

To investigate the relationship of the organizational structure of the school to students' self-concepts as learners, Nelson (1972) compared responses from 566 students in 13 IGE schools with those of 410 students in 12 non-IGE control schools. Students in IGE schools scored significantly higher than students in non-IGE schools in their attitudes toward themselves as learners.

In summary, it can be concluded that the IGE school possesses many of the characteristics of an organic organization. From these findings, several suggestions can be made for helping the IGE school become even more dynamic.

Practical Implications Concerning Organizational Roles and Relations

The foregoing findings could yield numerous specific suggestions for improved practice. Some major implications for the roles of the school superintendent, the principal, unit leaders, and teachers in their efforts to improve education are suggested here.

It is quite clear that only in a very few districts were the superintendents adequately informed about and actively supporting educational innovation and change. In many districts, for example, SPCs had not been formed and the existing district structures were not performing essential functions. Undoubtedly, this also created some role ambiguity for district wide curriculum coordinators and consultants who were struggling simply to keep abreast of, much less support, local implementation efforts. In fact, in some school systems the existing policies and procedures seemed more to inhibit than to encourage innovation, being viewed by IICs and I & R Units as limiting their legitimate involvement in making important educational decisions (Kawleski, 1977; Moyle, 1977).

In the era of declining enrollments, tax limitations, and educational conservatism it is, of course, difficult for some school systems simply to survive, let alone mount major change programs. Even so, school superintendents and other central office personnel should be reminded that the instructional program of the school should receive primary priority. School superintendents and central office personnel should support, rather than neglect, or even thwart, the creative efforts of local school personnel.

As for the crucial role of the principal, studies of the multiunit school organization revealed that many principals exemplified excellent instructional leadership. The change to IGE was essentially a local school phenomenon spearheaded by the principal. Even so, several improvements in principals' leadership behavior could be made. The first related to their solid commitment to shared decision making. Even in excellent IGE schools some principals tended to "use" the IIC, rather than work as a productive member of it. Unfortunately, some withheld information, failed to clarify decision issues, refused to accept appropriate input, ran "sloppy" meetings, and were otherwise engaged in thinly veiled "gamesmanship" with the leaders of their staff (Holmquist, 1976; Moyle, 1977). It takes courage and skill on the part of the principal to share traditional decision-making prerogatives with others.

Another area in which the leadership behavior of the principal could be improved was the essential boundary spanning role, both with the central office of the district and with parents and citizens (Lipham, 1977). Instead of utilizing appropriate formal structures, such as establishing SPCs or including parents and others on IICs, some principals tended to waste considerable time, effort, and energy engaging in informal influence practices. As Guba (1960) has indicated, however, the administrator who uses informal individual influence to the exclusion of formal organizational authority is half-powerless in either managing or changing educational programs.

Although the unit leader role is a new one in elementary education, there already appears to be considerable agreement on its expectations and effectiveness in improving staff and student outcomes in the school. In this regard, unit leaders should be careful not to become "mini-principals" or vice principals in charge of instruction. While unit leaders do have some managerial responsibilities, staffs valued most the supportive and participative efforts of unit leaders as knowledgeable, helpful colleagues to whom they frequently turned for assistance (Evers, 1974; Kawleski, 1977).

From the research (Nerlinger, 1975) it is also clear that unit leaders must pay additional attention to their representation function, both carrying the needs, attitudes, and input of the I & R Units upward to the IIC and SPC, and relaying policies, procedures, and objectives downward to their units. Unit leaders, therefore, need to improve their understanding and skills in two-way communication and group decision making, as well as in teaching methods and procedures.

Finally, the research makes clear that probably not all people should attempt to teach in an IGE school. Philosophical commitment, interpersonal compatibility, assumption of fair responsibility, and improved teaching skills are required. Observations in some IGE schools revealed that the actual instructional activities proceeded in a remarkably similar way to those in traditional schools—class-sized groups, mimeographed sheets, and teacher dominated activities. In a few schools, teachers equated IGE with their reading program; others had little knowledge of the components of IGE; and still others had never heard of the Instructional Programming Model. Evidently, continuing staff development programs for staffs are needed not only during changeover, but during refinement and renewal phases of implementation. The need for inservice training is urgent since teachers are not only the primary implementors, but in the eyes of other teachers are the ultimate legitimizers of any program. Study of staff development needs of those engaged in individualized instruction is currently continuing at the R & D Center (Lehr, 1979).

Research findings regarding teacher interdependence show that despite a probable over-use of the total group process, teachers were excellent planners. They were less satisfied, however, with their actual work interdependence. How teachers can work together effectively was beyond the scope of the studies of the multiunit organization, but this issue certainly should receive priority in further research on individualized schooling.

Necessary Research About the Multiunit Organization

From the foregoing studies one might conclude erroneously that since implementation of the multiunit form of school organization consistently produces significant gains in both organizational effectiveness and individual efficiency, it needs only to be refined. In fact, however, the research conducted on the multiunit school to date is more exploratory than explanatory. Additional study of the multiunit organization is needed.

The primary need for future research on the multiunit school organization is for studies of the relationship between changes in the organizational structure and changes in the outcomes of the school. As theorists and researchers will recognize immediately, much of the research has been empirical or correlational, rather than causative or predictive. Although we recognize the limitations of pure research designs for examining normative social institutions such as the school, we recommend that future studies of the multiunit school be conducted which, at least, utilize pretest-posttest or longitudinal case study designs.

In addition to our methodological concerns, we suggest that future researchers concerned with educational change consider a number of theoretical and practical issues. First, we need to ascertain whether or not some major domains currently are being overlooked. For example, how do philosophical, economic, or political factors affect organizational-individual relationships and the outcomes of the school? How does role clarity (or role ambiguity) relate to individual and group performance? How is power shared and equalized among individuals and groups in the school? How do planning and work interdependence alter teaching and learning behavior? Aswers to these and a multitude of other important questions might well be sought in an intensive analysis of the multiunit school.

Second, we need to determine the extent to which the relationships among certain variables may be curvilinear, rather than linear. For example, it seems possible to have too much as well as too little decentralization of decision making in the school. Some staffs seem to suffer as much from decision saturation as others do from decision deprivation. It may be that effective current practices in schools have outrun available theories concerning involvement in decision making and still largely view decision making as rational rather than interpersonal.

We need also to examine more closely how certain significant variables are interrelated—whether meaningful paths can be traced among independent, intervening, mediating, and outcome variables. Here, questions might be: How are leadership behavior and decentralization of decision making interrelated? How do organizational and structural variables make their different contributions to the teaching-learning process? How are administrative and teaching behavior related to teacher attitudes and effectiveness and student attitudes and achievement? Here, bridges must be built between those concerned with research on administration and those concerned with research on the teaching-learning process.

Finally, future research should be directed toward developing and utilizing better measures of the effectiveness of the school. Although such outcomes as attitudes, motivation, and satisfaction of teachers, and self-concept, motivation, and morale of students are crucial and significant variables in the affective domain, additional research is needed concerning hypothesized relationships between the organizational structure of the school and outcomes in the cognitive and psychomotor domains. It is evident that multiple criteria are required to assess the outcomes of the educative process.

Summary

The first part of this chapter briefly described the major dimensions of social systems theory and axiomatic organizational theory which served as the basis for research on the multiunit form of elementary school organization. Findings from research on the multiunit IGE school revealed considerable agreement on expectations for the major functions of the SPC, IIC, and I & R Units, as well as agreement on the important roles within each group. In general, IICs and I & R Units were performing their functions more effectively than were SPCs. Articulations within, between, and among the three system levels, however, could be improved.

According to findings of the studies based on axiomatic organizational theory, the multiunit IGE school is a dynamic, organic organization. IGE schools were found to be lower in centralization, formalization, and stratification, and higher in complexity, adaptiveness, motivation, and satisfaction than were non-IGE schools.

Implications from the studies were drawn to enhance the effectiveness of school superintendents, principals, unit leaders, and teachers. Finally, some methodological and substantive issues were raised regarding further research required to improve the organization and operation of the schools.

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Chapter IV

LEADERSHIP IN IGE SCHOOLS

John C. Daresh

Leadership is an important factor in the successful adoption or improvement of any program in the school. Such aspects of leadership frequency, potency, scope, style, and quality are particularly crucial to the successful implementation of a major educational innovation such as IGE.

This chapter presents research findings concerning leadership in multiunit IGE elementary schools. First, a brief overview is given of the theoretical background for the research conducted on leadership, and the major dimensions of leader behavior are defined. Second, schoolwide leader behavior is examined in relation to staff satisfaction. Next, leadership in the IIC and I & R Units is examined. The chapter concludes by considering some practical guidelines and additional research needed for improving leadership in schools.

Leadership Theory[1]

Attempts to analyze leadership over the years have led researchers and others to explain this crucial variable from a variety of perspectives. The most frequent approaches to the study of leadership include the psychological, the sociological, and, most recently, the behavioral approach.

The psychological approach views leadership as determined primarily by the personality of an individual. Thus, people who wish to understand what characteristics compose leadership look to personal examples of how a particular individual, or "great person," demonstrated leadership in a particular situation. Coupled with this approach is the attempt to isolate those traits most often exhibited while one is serving as a leader. Such an approach to leadership is of limited use to educational researchers. As Lipham and Hoeh (1974, p. 177) stated, "In the field of education, as contrasted with other disciplines, limited scholarly effort has been directed toward analysis of leadership by utilizing the great person approach. Existing studies tend more to enshrine leaders than to explain leadership."

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[1] Portions of this section are drawn from: J.M. Lipham, Leadership: General Theory and Research, in L. L. Cunningham and W. J. Gephart (Eds.), Leadership: *The Science and The Art Today*, Itasca, Illinois: Peacock, 1973, pp. 1-15; and J. M. Lipham and J. A. Hoeh, Jr., *The Principalship: Foundations and Functions*, New York: Harper & Row, 1974, pp. 176-201.

In sharp contrast to the psychological approach to the study of leadership stands the sociological approach which maintains that leadership is determined less by the characteristics of individuals than by the requirements of the group. According to this view, acts of leadership are the direct result of situations arising in groups and organizations which call for those acts. Thus, the exercise of leadership by an individual is brought about by the demands of the group with which that person must interact. Hemphill (1949) conducted a comprehensive sociological study of the impact of leaders according to differences among groups. He found such variables as viscidity (the feeling of cohesion in a group), hedonic tone (the degree of satisfaction of group members), size of the group, homogeneity of group members, and intimacy among the group to correlate significantly with leadership effectiveness. Inevitably, however, it was realized that if the study of leadership was to focus purely on such situationally specific issues as how particular groups react to particular individuals, then the study of leadership, per se, would end.

The most recent approach to the analysis of leadership examines the behavior of the leader. This perspective includes aspects of both previous approaches. The behavioral view recognizes that a leader's behavior is the result of a complex blend not only of personal characteristics, but also of the situation in which the leader must act. This approach, which serves as the foundation of the IGE-related research reported in this chapter, focuses on the observed behavior of the leader-in-situation.

No matter which approach is used to analyze leadership, certain basic issues must be considered. These include the definition, locus, frequency, potency, and scope of leadership. There are many ways to define leadership and leader behavior. In education, leadership has been defined as "that behavior of an individual which initiates changes in goals, objectives, configurations, procedures, inputs, processes, and ultimately the output of a social system" (Lipham, 1973, p. 6). The studies of leadership conducted at the R & D Center started with this common definition.

The locus for leadership involves the issue of the focal social system in which leadership occurs. It considers, for example, whether the leadership being analyzed occurs in the classroom, school, school district, or entire community. Studies of the multiunit IGE elementary school examined leadership on a schoolwide basis, as well as in the IIC and I & R Units.

The frequency of leadership, or how often a leader engages in certain behaviors, is also important. On the one hand, leaders may attempt too many acts of leadership too often without actually implementing anything, evaluating it, or achieving effective outcomes. On the other hand, some people rarely engage in any active leadership attempts. In short, there is no consensus as to what constitutes the optimal balance between "too frequent" and "not often enough." Studies of the multiunit school sought to determine appropriate levels of frequency in leadership behavior.

Linked to the concept of frequency of leadership is the variable of potency which refers to "the extent to which an initiated change by a leader represents a significant departure from that which exists, i.e., the magnitude of an initiated change" (Lipham & Hoeh, 1974, p. 186). Since the adoption of an educational innovation such as IGE requires major alterations in the goals, structures, and processes of the school, leadership in such situations demands a high degree of potency.

A final issue regarding leadership concerns its scope. Leadership may be functionally diffuse or functionally specific. In diffuse leadership the individuals in a relationship have unlimited mutual responsibilities and obligations, while in functionally specific leadership, the obligations, breadth, and depth of the leadership role are limited and functions circumscribed. IGE changes the organizations of the school by expanding the scope of leadership to include functionally diffuse relationships and new responsibilities which may alter the previous functions of the principal, staff, and others. Hence, leadership scope may be analyzed at the unit, school, and district levels.

This overview of different conceptual approaches to leadership provided the theoretical foundation for the studies of the multiunit IGE elementary school. In essence, the central question of the studies was: "How do school principals and other leaders behave when they are leading and what are the results of their leadership behavior?"

Studies conducted in the R & D Center examined leadership as an aggregate of different factors which included a person's behavior, contextual relationships, and the locus, frequency, potency, and scope of the leadership behavior. To reflect these variables, researchers used the leadership dimensions as described by Bowers and Seashore (1966), Halpin (1956), and House (1973).

Halpin and Winer (1957) conceptualized leader behavior as composed of two basic dimensions, initiating structure and consideration, which are defined as follows (Halpin, 1957, p. 4):

1. Initiating Structure—behavior which delineates the relationship between the leader and members of the work group, and endeavors to establish well defined patterns of organization, channels of communication, and methods of procedure.

2. Consideration—behavior which indicates friendship, mutual trust, respect, and warmth in the relationship between the leader and the staff.

House (1971) utilized three terms for describing leader behavior. These dimensions, derived from those of Halpin and Winer, are instrumental, participative, and supportive behavior. They are defined as follows:

1. Instrumental leadership—behavior which delineates the relationship between the leader and members of the work group and attempts to define clearly patterns of the organization without autocratic or punitive control.
2. Supportive leadership—behavior which indicates friendship and warmth toward the work group by the leader.
3. Participative leadership—behavior which allows subordinates to influence decisions by asking for suggestions and including subordinates in the decision-making process.

Another approach to describing leadership was developed by Bowers and Seashore (1966) who viewed leadership behavior as consisting of goal emphasis, work facilitation, support, and interaction facilitation. These four dimensions are defined as follows:

1. Goal emphasis—behavior which stimulates enthusiasm for meeting the group's goals or achieving excellent performance.
2. Work facilitation—behavior which helps goal attainment by scheduling, planning, and coordinating.
3. Support—behavior which enhances someone else's feelings of personal worth and importance.
4. Interaction facilitation—behavior which encourages members of the group to develop close, mutually satisfying relationships.

Depending on researchers' preference, the foregoing descriptive classifications were used to examine and explain the kinds of leadership behavior principals and unit leaders use and how their behavior relates to functions, processes, and relationships in multiunit IGE elementary schools, IICs, and I & R Units.

Schoolwide Leadership

The effects of leadership behavior throughout the school were studied by Mendenhall (1977) who examined the relationship between the leadership behavior of both principals and unit leaders to teach job satisfaction. The data were collected on site in 41 IGE elementary schools throughout the nation.

Mendenhall used Bowers and Seashore's four dimensions—work facilitation, support, goal emphasis, and interaction facilitation—and had teachers describe the predominant leadership styles of both principals and unit leaders. Teachers also indicated their overall and facet job satisfaction. Mendenhall found the following:

1. When the principal exhibited leadership behavior that was high in work facilitation, support, interaction facilitation, and goal emphasis, the staff job satisfaction was high.

2. There was no relationship between unit leader behavior in work facilitation, support, interaction facilitation, and goal emphasis and teacher job satisfaction.

Mendenhall concluded therefore that the leadership behavior of the principal was important in promoting increased job satisfaction in IGE schools. However, the role of the unit leader in providing leadership was not so clear. One possible explanation of why the unit leader's behavior was not related to teacher job satisfaction was that the unit leader's position was viewed more as a staff teacher than the head of the unit. Although one person in an I & R Unit may be designated to fulfill the nominal leadership role, other persons may emerge as functional leaders.

A second possible explanation for the lack of a relationship between unit leader behavior and teacher job satisfaction was that certain behaviors exhibited by unit leaders may have been viewed neutrally or even negatively by some staff teachers. Mendenhall speculated that since the position of unit leader is a new one, teachers may not yet view this as a major leadership position. If, for example, the unit leader engages in instrumental behavior when the position does not carry the status of authority, this could adversely affect the job satisfaction of teachers.

Leadership Behavior in the IIC

Two researchers examined the relationship between leadership behavior and the functions and processes of the IIC. Smith (1972) investigated the relationship between the principal's leadership and the effectiveness of the IIC; Moyle (1977) examined the impact of the principal's leadership behavior on the decision-making processes of the IIC.

Smith described leadership behavior according to Halpin's two dimensions of initiating structure and consideration. Principals and other IIC members responded to the *Leader Behavior Description Questionnaire* to determine the overall perceived leadership style of the principal. IIC effectiveness was

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determined by another questionnaire and was defined in terms of adaptiveness, productivity, flexibility, and satisfaction with the IIC shown by the administrative and instructional staff of each school.

Smith examined 36 IGE schools in Colorado and Wisconsin and found that while the initiating structure behavior of the principal was important, the IIC was viewed as more effective if the principal was high in consideration behavior. Thus, he concluded that IICs tend to be effective when the principal exhibits a primary concern for the comfort, well-being, status, and contribution of its members.

While Smith examined the relationship between leadership behavior and IIC effectiveness, Moyle examined the principal's leadership behavior in relation to the effectiveness of the decision-making processes in the IIC. Moyle used interview and observation techniques in eight IGE schools across the nation to characterize and describe the leadership behavior of principals according to the instrumental, participative, and supportive leadership dimensions of House. Decision-making processes in the IIC were described according to their perceived effectiveness by IIC members and the extent to which members felt satisfied with the decision-making process and results.

Moyle's findings concerning the leadership behavior of the principal were:

1. Instrumental leadership was exercised with caution by principals, but other IIC members viewed the principal's instrumental behavior as a positive leadership attribute.

2. Supportive leadership behavior was very important to teacher job satisfaction and effective decision making in the IIC. Even so, additional job responsibilities frequently precluded principals from providing supportive leader behavior to the extent desired by themselves and others.

3. Participative leadership was exhibited in different ways. Not all IIC members participated when certain decisions were being formulated because selective sharing of information occurred. For most IIC members, participative leadership was accepted as advice seeking on the part of the principal.

Overall, Moyle found that IGE principals demonstrated instrumental, supportive, and participative leadership behavior at a high level. Principals described their own behavior primarily as participative while IIC members characterized their principal's leadership behavior as substantially supportive. In the judgment of the researcher, however, instrumental leader behavior on the part of IGE principals was pervasive.

Thus these findings demonstrate that the leadership behavior of the principal was crucial in the effective functioning of the IIC. When principals had the ability to strike an appropriate balance between instrumental, supportive, and participative leadership behaviors, the effectiveness of decision making in IICs was enhanced. Significant instrumental behaviors included attention to agendas and procedures, the capacity to distinguish among areas of decision-making responsibility, and the ability to bring discussions to closure. Important supportive behaviors included frequent informal contact with and help to individuals. Participative leadership behavior involved the willingness to listen with an open mind and to work closely with IIC members.

Leadership Behavior in I & R Units

Three studies investigated leadership behavior in I & R Units in IGE schools. Evers (1974) and Gramenz (1974) conducted companion studies to examine the relationship between leader behavior and the effectiveness of I & R Units. Evers analyzed the role of the unit leader while Gramenz studied the principal's behavior. Subsequently, Kawleski (1977) examined the effect of the unit leader's behavior on the decision-making processes of the I & R Unit.

Evers and Gramenz utilized the same sample of 55 multiunit IGE elementary schools. Both researchers used the instruments and dimensions developed by House (1971) to measure instrumental, participative, and supportive leader behaviors of unit leaders and principals. I & R Unit effectiveness was ascertained with the I & R Unit Operations Questionnaire, an instrument developed to assess the perceived effectiveness of unit operations in four major categories: instructional program, staff development, organizational operations, and school-community relations.

Evers and Gramenz found that when unit leaders and principals exhibited instrumental, supportive, and participative leadership, then the instructional program of the I & R Units was evaluated as effective. The leadership of unit leaders was not, however, a strong predictor of the perceived effectiveness of I & R Units in staff development, organizational operations, or school-community relations.

From the findings, Evers concluded that the unit leader's behavior in demonstrating instrumental, participative, and supportive leadership had a significant impact on the effectiveness of instruction. Moreover, Gramenz concluded that instrumental, participative, and supportive leadership behaviors of principals were significantly related to the total effectiveness of the units. Therefore, principals should exhibit behaviors indicative of instrumental leadership (clarifying expectations, specifying procedures to be followed, and assigning specific tasks), supportive leadership (being friendly and approachable, looking out for the personal welfare of unit members, and helping make work pleasant on their unit tasks), and participative leadership (consulting with unit members before taking action, allowing unit members to influence decisions, and asking unit members for suggestions in decision making).

Kawleski, in a companion study to Moyle's, visited eight IGE elementary schools judged to be successful and used interviews and observations to determine the effect of unit leader behavior on the decision-making process in the I & R Unit. Again, leadership behavior was described according to House's dimensions. Decision-making processes in the I & R Units were analyzed according to their perceived effectiveness by unit members. The extent to which unit members felt satisfied with how decisions were made and what decisions were made was also measured.

Kawleski's findings concerning the leadership behavior of unit leaders were:

1. Unit leaders did not see instrumental leadership as a major requirement of their role. Such leadersip behavior was felt to be contrary to the collegial nature of the unit leader's role and more appropriate to the principal. Unit leaders viewed their primary role as one of service to the unit rather than direction.

2. Supportive leader behavior by unit leaders was very important to teacher satisfaction and the effective functioning of the unit. All unit leaders demonstrated supportive leadership to a considerable degree.

3. Participative leader behavior by unit leaders was also of great importance. Staff teachers felt very strongly about their own participation in decision making; they demanded it for issues of unit scope and desired it for issues of school and district scope.

Overall, Kawleski found that unit leaders demonstrated participative and supportive leader behavior at a high level. She therefore concluded that unit leaders were primarily providing service to the units rather than directing them. Teachers felt that the unit leader should not be an administrator but a colleague, able to provide supportive and participative leadership.

Practical Implications Concerning Leadership Behavior

Each of the researchers offered numerous practical suggestions to building principals and unit leaders for improving their leadership behavior.

It seems clear that the process used for selecting principals is an important aspect of guaranteeing the overall effectiveness of the individual school. School districts would do well, therefore, to spend time and effort ensuring that principals are selected on the basis of their demonstrated leadership and their potential to utilize an appropriate balance of different leadership behaviors. Once selections have been made, it is necessary for districts to provide support and assistance in further leadership development.

Principals need to understand that leadership is composed of several types of behavior, and that if they engage in them appropriately, the job satisfaction of teachers will increase. For example, those principals who developed an understanding of leadership, decision-making, and group dynamics theories displayed different leadership behaviors which resulted in increased teacher satisfaction.

Principals can improve the effectiveness of the teaching-learning process in the I & R Units by selecting unit leaders who can provide the type of leadership required. First, principals can clarify the role of unit leader as different either from administration or an ordinary teaching position. This can be partially reinforced by giving either release time or supplemental pay to unit leaders.

To be effective, unit leaders should consider the needs of other teachers, be friendly and approachable, allow others to influence decisions, and include them in decision making. In short, unit leaders should exhibit supportive and participative leadership behavior in planning, implementing, and evaluating instructional programs.

The role of the unit leader can be constantly reinforced through training in effective leadership and instructional techniques. Unit leaders should help plan and participate in the leadership and staff development programs offered. Finally, the unit leader is most effective when perceived as a "master teacher" who is capable of supporting unit teachers and eliciting from them the desire to participate actively in all operations of the unit.

Necessary Research About Leadership

Additional study is needed to understand leadership behavior in the school. To date, studies have been conducted which examine only the leadership of position holders in the school, i.e., principals and unit leaders. More information is needed concerning informal leadership and how the emergence of informal leaders may enhance the general quality of the educational program of the school. Such studies should further our understanding of the locus and scope of leadership behavior. Persons with experience in schools know that frequently informal leaders have great impact on the success or failure of any programs. Questions that remain are: Do informal leaders have discernable leadership behaviors appropriate across a variety of schools? Are informal leaders limited in scope and under what circumstances are they likely to emerge? How can principals and unit leaders effectively involve emergent leaders in complementing formal leadership roles?

The relationship between leadership and the phase of implementation a school has reached also should be examined. In the studies completed to date, distinctions were not made among schools in which IGE was just emerging as "a new way of doing things" as opposed to schools in which IGE "was the accepted way of doing things." Subsequent studies of secondary schools (Daresh, 1978; Neiner, 1978; and Watkins, 1978) have shown that different leadership behaviors assume varying importance as an organization progresses through the phases of awareness, commitment, changeover, refinement, and renewal of an innovation. More such studies may help to answer this central question: What balance among instrumental, supportive, and participative leadership behavior is effective for different personnel in schools at different phases of the change process?

Summary

This chapter was introduced by a brief overview of theoretical considerations related to the study of leadership. The studies of leadership in the multiunit IGE elementary school approached leadership from a behavioral perspective. In so doing, the researchers considered the issues of definition, locus, frequency, potency, and quality of leadership. The dimensions of leader behavior examined by researchers in the R & D Center included initiating structure and consideration (Halpin, 1957); instrumental, supportive and participative leadership (House, 1971); and goal emphasis, work facilitation, support, and interaction facilitation (Bowers & Seashore, 1966).

The studies of leadership examined principal and unit leader behavior in relation to schoolwide processes, the leadership behavior of the principal in the IIC, and the leadership behavior of both principals and unit leaders on I & R Units.

According to the findings, the effective principal is able to maintain an appropriate balance between participative, instrumental, and supportive leader behaviors. Under these circumstances there will be higher job satisfaction among staff members, as well as more effective IICs and I & R Units. The effective unit leader exhibits supportive and participative leader behavior and is perceived by staff teachers not as an administrator, but as a helpful, involved fellow teacher.

These studies evoked several suggestions for improving the leader behavior of principals and unit leaders. In addition, some suggestions were made for research to further our understanding of formal and informal leadership in the schools.

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Chapter V

DECISION MAKING IN IGE SCHOOLS

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and
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Just as decision making is at the heart of the administrative process, so also is it a foremost feature of IGE schools. The multiunit form of school organization was specifically designed so that those affected by a decision would have the opportunity to participate in making it at instructional, schoolwide, and districtwide levels (Klausmeier, Morrow, & Walter, 1968). To investigate the nature, structure, processes, and outcomes of educational decision making, several studies were conducted in the Administration and Organization Research Unit of the R & D Center regarding decision making in IGE schools.

This chapter first presents a brief overview of important theoretical constructs concerning the decision-making process. Then, some significant findings of the studies are presented concerning decision making schoolwide, in IICs, and in I & R Units. These are followed by several implications drawn from the findings for improved practice in the schools. The chapter concludes with specific suggestions for further research required to clarify the decision-making process in education.

Decision Theory[1]

Decision making is a complex phenomenon involving intricate interrelationships of situational, organizational, and personal variables, thus making it difficult to develop a comprehensive and concise explanatory model. Even so, the importance of decision making has been recognized and many researchers (Dill, 1964; Gregg, 1957; Griffiths, 1959; Phil Delta Kappa, 1971) have attempted to describe and delineate its significant elements in applying decision-making concepts to educational practice.

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[1] Portions of this section are drawn from: J. M. Lipham, Improving the decision-making skills of the principal, in J. A. Culbertson, C. Henson, and R. Morrison (Eds.), *Performance objectives for school principals*, Berkeley, Calif: McCutchan, 1974, pp. 83-111.

Most of the current theories of decision making view it as a rational process and the studies of the multiunit IGE school typically took this theoretical stance. In examining decision making as a rational process, one must first define decision making itself. Then, the dimensions of decision content, decision stages, and decision involvement must be conceptualized and clarified in order to understand decision making in educational or other organizations. Decision making has been defined as a process wherein "awareness of a problematic state of a system, influenced by information and values, is reduced to competing alternatives, among which a choice is made, based upon estimated outcome states of the system" (Lipham & Hoeh, 1974, p. 155).

As shown in Figure 5.1, the dimensions of decision content, decision stages, and decision involvement are three basic considerations in the decision-making process. Decision content refers to what the decision is about; decision stages refer to how the decision is made; and decision involvement refers to who participates in making the decision.

Decision Content

Each decision that is role relevant in the educational organization may be classified according to what the decision deals with—curriculum and instruction, staff personnel, student personnel, finance and business management, school plant services, or home-school-community relations. Most minor decisions deal primarily with one of these functions in the school. However, the major decision to adopt a comprehensive change, such as the system of IGE, has implications for all of the decision content functions.

Just as decisions can range across several content functions, so also can they vary in the scope of the content covered. The content of most decisions differs according to the various levels of the organization. In the school, for example, some decisions are most relevant at the teaching-learning level; others, at the schoolwide level; and still others, at the districtwide level. Hence, in analyzing the decision-making process it is instructive to examine the scope of the content covered in terms of its appropriateness within, between, and among the several levels of the organization, since all major decisions in education are shared.

Decision Stages

Regardless of content, consideration must be given to "how" a decision is made—the several steps or stages in rational decision making. Although described differently by various authors (Barnard, 1938; Bross, 1953; Cyert & March, 1963; Simon, 1960), the six stages of decision making include the following:

1. Identifying the nature of the problem
2. Clarifying and defining the problem
3. Formulating and weighing alternatives

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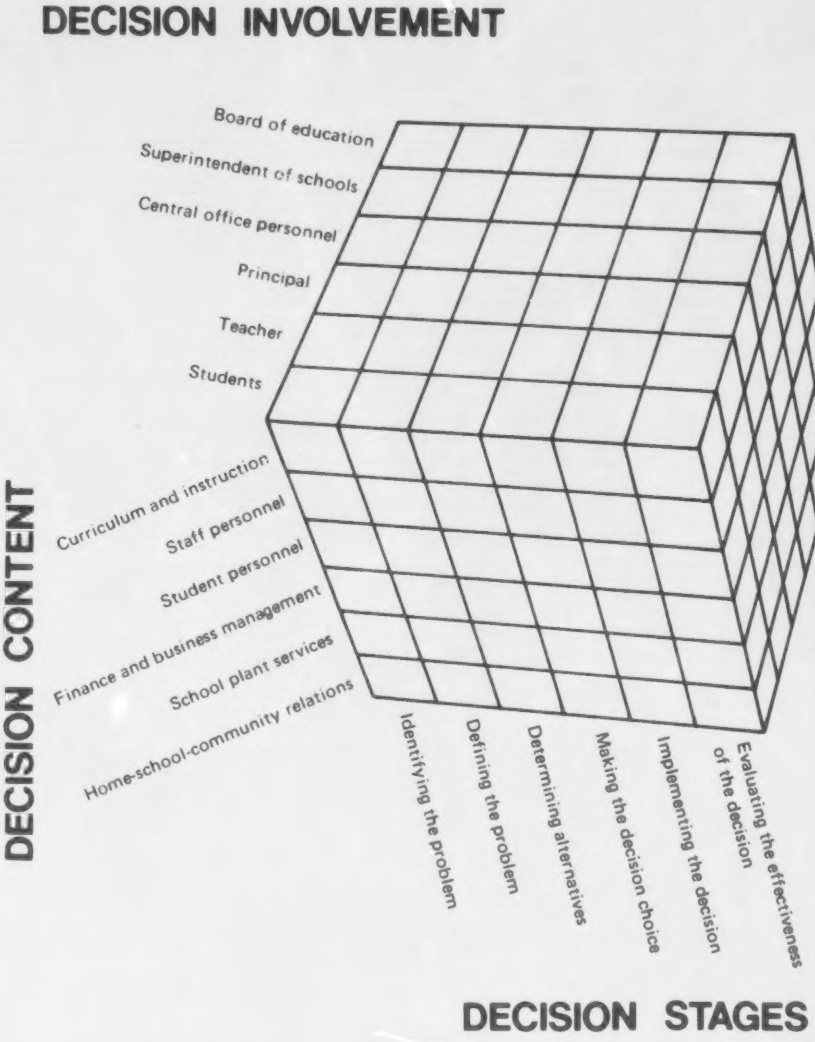

DECISION INVOLVEMENT
Board of education
Superintendent of schools
Central office personnel
Principal
Teacher
Students
DECISION CONTENT
Curriculum and instruction
Staff personnel
Student personnel
Finance and business management
School plant services
Home-school-community relations
Identifying the problem
Defining the problem
Determining alternatives
Making the decision choice
Implementing the decision
Evaluating the effectiveness of the decision
DECISION STAGES

Figure 5.1. Basic Dimensions of the Decision-Making Process.

Adapted from: J. M. Lipham, Improving the decision-making skills of the principal, in J. A. Culbertson, C. Henson, & R. Morrison (Eds.), *Performance objectives for school principals,* Berkeley, California: McCutchan, 1974, p. 106.

4. Making the decision choice
5. Implementing the decision solution
6. Evaluating the effectiveness of the decision

A systems model which shows the progression of a decision through these several stages in time is shown in Figure 5.2. Here, it can be seen that the amount, form, and flow of information and the societal, organizational, and individual values impact directly on the perceptual screen of the decision maker. Along with feedback, they influence the definition of the problem, the formulation and weighing of decision alternatives, the actual decision choice, the implementation of the decision, and the evaluation of the effectiveness of the outcomes of the decision.

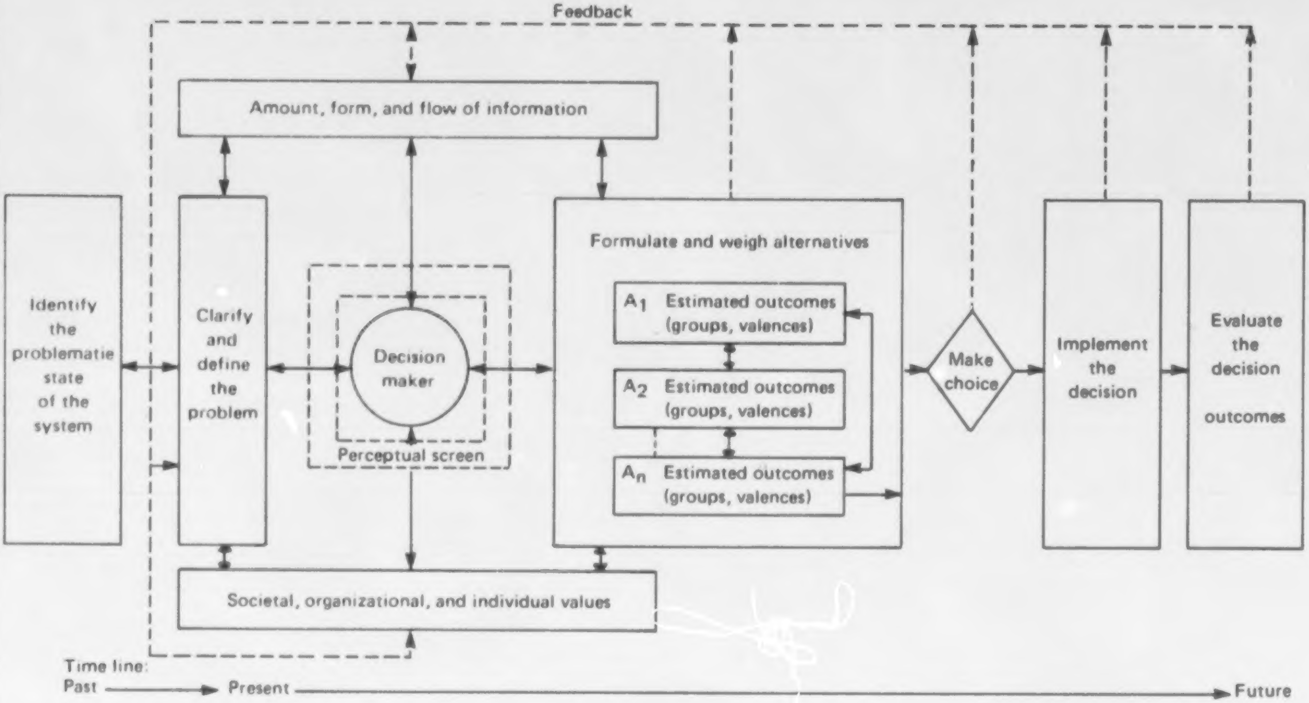
Decision Involvement

The dimension of decision involvement concerns (1) who participates in making a decision, (2) how often they participate, and (3) the level of their participation. As shown in Figure 5.1, the major intraorganizational groups and individuals who can participate include the board of education, the school superintendent, central office personnel, the principal, teachers, and students. Relevant extraorganizational groups who may also participate include parents and citizens in the local community and personnel in intermediate educational agencies, state departments of education, and national and international agencies, both public and private. Thus, theoretically, any educational decision may directly or indirectly involve many individuals and groups that are either closely linked or loosely coupled since schools are dynamic social systems.

The second aspect of decision involvement relates to how often groups or individuals participate in making a particular decision. Such frequency of involvement may range from "very often" to "very seldom" or "always" to "never." Frequent, excessive involvement leads to a "decision saturation" state whereas infrequent involvement—particularly when the individual is informed and wishes to be involved (Alutto & Belasco, 1972; Bridges, 1967)—leads to "decision deprivation."

The third aspect of decision involvement refers to the level, extent, or degree of participation in decision making. As conceptualized in an early study of decision point analysis (Eye, Lipham, & Netzer, 1965) the level of decision involvement may range from high to low according to the following scale:

5. Make the decision.
4. Suggest specific alternatives.
3. Help formulate alternatives.
2. Provide information about the decision.
1. No involvement in the decision.



Feedback
Amount, form, and flow of information
Identify the problematie state of the system
Clarify and define the problem
Decision maker
Perceptual screen
Formulate and weigh alternatives
A1 Estimated outcomes (groups, valences)
A2 Estimated outcomes (groups, valences)
An Estimated outcomes (groups, valences)
Make choice
Implement the decision
Evaluate the decision outcomes
Societal, organizational, and individual values
Time line:
Past
Present
Future

Figure 5.2. Stages in the Decision-Making Process.

Adapted from: J. M. Lipham, Improving the decision-making skills of the principal, in J. A. Culbertson, C. Henson, and R. Morrison (Eds.), *Performance objectives for school principals*, Berkeley, California: McCutchan, 1974, p. 106.

Recently, these levels have been described by an over-all scale ranging from "great involvement" to "no involvement" to ascertain the level of participation by individuals and groups in educational decision making (Speed, 1979).

The dimension of involvement in decision making, therefore, includes consideration of who is involved, how often they are involved, and the level of their involvement. Studies of the decision-making process in IGE schools paid attention to these three important variables in the involvement dimension, as well as to the other two major dimensions, decision content and decision stages. As with the studies of leadership, the decision-making process in IGE schools was examined schoolwide, in IICs, and in I & R Units.

Schoolwide Decision Making

A comprehensive study of content, stages, and involvement in decision making in multiunit IGE elementary schools was conducted by Wright (1976). He developed the *Decision Involvement Index* to measure both actual and desired level of staff involvement in making decisions in each of the functional content areas of decision making in IGE schools. The functional content items were factor-analyzed to distinguish items of unit scope, schoolwide scope, and districtwide scope. The instrument was administered in 77 randomly selected IGE elementary schools in 13 states.

Wright discovered that teachers in IGE schools were moderately to highly involved in making potent decisions of unit scope; they had some involvement in making decisions of schoolwide scope; and they had little involvement in making decisions of districtwide scope. He found that teachers desired greater involvement in making decisions of schoolwide and districtwide scope, since many of them felt that administrators, even in SPCs and IICs, were still making more potent decisions than they deemed ideal—particularly in the content areas of curriculum and instruction.

In a subsequent study of schoolwide decision making in IGE schools, Feldman (1977) adapted Wright's *Decision Involvement Index* by adding a question to ascertain the level of staff satisfaction with the decision-making process itself. Answers ranged from "very satisfied" to "very dissatisfied." In conjunction with the studies by Bocian (1976), Mendenhall (1977), and Sigurdson (1976), Feldman also administered on-site measures of teacher job satisfaction in 41 IGE schools. He found the actual level of teachers' involvement in and satisfaction with the decision making process to be significantly and positively related to overall and facet teacher job satisfaction.

Whereas Wright and Feldman obtained quantitative data on decision content, scope, involvement, and satisfaction, Holmquist (1976) conceptualized and conducted an intensive on-site observational study to obtain qualitative descriptions of the decision-making processes actually used in IGE elementary schools. In three selected schools, he examined primary documents, observed IIC and I & R Unit meetings, and interviewed the entire schools' staffs.

Holmquist found considerable sharing of the content of decisions about curriculum and instruction and student personnel, but some reluctance of central office administrators and school principals to share decisions in which content concerned staff personnel, finance and business management, school plant, and even home-school-community relations.

As for the stages of decision making, Holmquist discovered that great attention was given to the initial stages of problem articulation, alternative posing and weighing, and making the decision choice, but both IICs and I & R Units paid little attention to the subsequent stages of decision implementation and evaluation. He also discovered excessive reliance on total group participation for making many decisions. Such personal variables as expertise, experience in the school, and informal influence, and organizational variables including legal requirements, formal positions, and access to information frequently made the actual decision-making process in the schools more social or political than rational.

Decision Making in IICs

Several studies of the decision-making processes used by IICs (Herrick, 1974; Smith, 1972; Walter, 1973) were summarized earlier in Chapter 3 about the decentralization of decision making. These studies portrayed the IIC as possessing considerable potential for shared decision making in the school. To investigate the extent to which the IIC was fulfilling its potential, Moyle (1977) selected eight established IGE schools and examined the decision-making processes in their IICs. From interviews, observations, and questionnaires he found IICs to be significantly involved in shared decision making on many matters related to the instructional program of the school. IICs fostered open communication, participative leadership, and representation of member viewpoints, values, and interests.

Similar results were found by Nerlinger (1975) in an empirical analysis of participative decision making in 48 randomly selected IGE schools. In addition to Wright's (1976) *Decision Involvement Index* she questioned the extent to which teachers felt they were represented by their unit leader. She found both extent of involvement in decision making by the IIC and extent of representation for teachers provided by the unit leader to be positively and significantly related to teachers' perceived effectiveness of the I & R Units. Teachers, however, saw themselves as being more represented than directly involved in schoolwide and districtwide decision making.

Decision Making in I & R Units

A qualitative analysis of decision content, decision stages, and decision involvement in 16 I & R Units was done by Kawleski (1977) in the 8 IGE schools studied simultaneously by Meyle. Kawleski found that I & R Units were dynamically involved in making and implementing many decisions about instructional programming, curricular materials, and student evaluation. Even though the scope of such decisions occasionally was constrained by the central office or lack of a viable SPC, I & R Unit staffs generally were able to share information, expertise, and imput to making, implementing, and evaluating decisions regarding instructional programming for the individual student.

Concerning the stages of making decisions, however, she found as did Holmquist (1976) a tendency to over-use the total group participation mode. The decision-making process, moreover, was frequently and unduly influenced by positional, organizational, and personal variables. Even so, I & R Unit staffs were cohesive groups who possessed planning interdependence, if not work interdependence.

Kawleski concluded that I & R Unit members generally were satisfied with both the frequency and the level of their decision-making involvement. As Wright (1976) had ascertained earlier, however, teachers wanted to increase the scope of their involvement—particularly at districtwide levels—since some of the decisions they viewed as their prerogatives were still being constrained more by district policies, procedures, committees, and individuals than by the principal and the IIC.

The foregoing findings from the several studies of decision-making processes in IGE schools possess many implications for the improvement of educational practice.

Practical Implications Concerning Decision Making

The primary factor required for improved decision making in schools is the need for existing or potential educational leaders to increase their understanding of the major dimensions of the decision-making process. Systematic study of decision theory, therefore, is basic to improved performance regarding the content, stage, and involvement dimensions of decision making.

In investigating the dimension of decision content, our studies generally have found a failure to realize that the implementation of a major innovation, such as IGE, cuts across all of the functional areas. Goodridge (1975), for example, found that some early adopters of IGE viewed the program as piecemeal— as the new form of organization of the multiunit school, a new reading program, a better student evaluation system, and the like. Although Wright (1976) and Kawleski (1977) found considerable participation at the teaching-learning level in making content decisions concerning the instructional program, these decisions were often constrained by district policies, procedures, and personnel. Moreover, Moyle (1977) found a tendency, even in some excellent IGE schools, for administrators to reserve the right to make potent decisions in the content areas of staff personnel, finance and business management, school facilities, and home-school-community relations. School superintendents, central office personnel, principals, and unit leaders would do well, therefore, to examine the extent to which they circumscribe the effectiveness of a major change program by unduly reserving the right to make potent decisions in certain content areas.

As for the stages of decision making, two weaknesses should be overcome. The first is the tendency to delay the decision-making process by repeatedly recycling through the initial stages of identifying the problem, defining the problem, and determining alternatives—as Holmquist (1976) pointed out, almost engaging in decision avoidance. Many problems and issues were "talked to death," leaving the decision to be made by default, "yea saying", silence, or even exhaustion. Moreover, the decisions that were finally made under these circumstances were seldom adequately clarified and communicated to others.

The second weakness in the stages of decision making was inadequate attention to implementing the decision and evaluating the effectiveness of decision results. The attitude, "Well, let's wait and see what happens," usually results in nothing. Undoubtedly, it is because of such cavalier attitudes on the part of practitioners that most state and federal programs now mandate systematic plans for implementing and evaluating programs before mounting major educational changes. Systematic plans for implementing decisions must be made, and the data required to evaluate the outcomes of the decision should be obtained.

To enhance involvement in decision making, practitioners first must decide who should be involved in making a particular decision. It is not enough

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to state simply, "those affected by the decision." Tests of relevance include questions such as the following:

- Does the content of the decision fall within the normative expectations of a role?
- Does the decision demand that diverse values, perspectives, and perceptions be brought to bear?
- Who has the appropriate and adequate information to offer?
- Who is concerned about the decision and its outcomes?

For several years, the general rule has been to involve anyone and everyone in decision making on the assumption that involvement increases commitment. If the foregoing questions are not answered, however, involvement may simply increase one's commitment—not to the decision but to a determination never again to become involved.

Frequency of involvement is another important factor in decision making. Our studies revealed a high degree of staff satisfaction, both with the decision-making process itself (Feldman, 1977) and with jobs as a whole (Mendenhall, 1977) when people were given the opportunity to participate in making relevant decisions. In IGE schools, the decision-making climate which prevailed encouraged openness (Kawleski, 1977), innovativeness (Walter, 1973), and motivation (Herrick, 1974). Even so, practitioners should realize that group decision making requires adequate time and resources, as well as appropriate procedures.

It was refreshing to discover that in IGE schools "little" or "no" involvement was not the norm. In general, all personnel—save perhaps students, parents, and central office staff—had moved to the level of "providing input and informaton," "examining alternatives," and "recommending alternatives" (Kawleski, 1977; Nerlinger, 1975). Such upward movement in the level of involvement still stopped short of actually "making the decision," except on issues of teaching-learning scope (Moyle, 1977). Hence, administrators should realize that through appropriately involving others, their own formal leadership and decision-making roles and responsibilities are actually enhanced.

Needed Research About Decision Making

Many fruitful avenues for further research should be explored to enhance our understanding of decision making in the schools. The theoretical model of the decision-making process (Lipham, 1974) raises several research issues regarding each dimension.

Decision Content

1. In implementing a major educational innovation, how do the content areas overlap and interact? For example, how do decisions on the form of organizational structure affect instruction? How do decisions about staff selection, evaluation, pay, promotion, development, evaluation, and transfer relate to staff and student performance? How do curricular, financial, and school plant decisions affect program implementation, home-school-community relations, and other outcomes?

2. How do decisions of districtwide and schoolwide scope affect decisions of unit scope, and conversely? What articulation is needed between and among the various levels of the organization?

3. To what extent is the local school moving simultaneously from centralized to decentralized and from decentralized to centralized decision making, and in which functional content areas?

Decision Stages

4. To what extent is excessive attention given to the initial decision stages of identifying the problem, defining the problem, and determining alternatives, while ignoring the subsequent stages of making the decision, implementing it, and evaluating its outcomes?

5. To what extent do social, political, or personal factors render the stages of the decision-making process more illogical than rational?

Decision Involvement

6. How can participants who can contribute meaningfully to the decision-making process in schools be identified? Which participants, such as school board members, central office personnel, students, parents, citizens, and others, are now largely being ignored and at what costs to the quality of the decisions made?

7. How can frequency of involvement in decision making be made more effective in terms of the content, stages, timing, and human and material resources required?

8. What effective alternatives exist to the total group participation mode for making educational decisions?

9. How does the level of involvement in decision making enhance the achievement of organizational and personal goals?

10. How does the level of involvement in decision making alter established and emerging intra- and extraorganizational roles in the field of education?

Summary

In the first part of this chapter the decision-making process in education was dissected for analysis into three dimensions: decision content, decision stages, and decision involvement. Decision content includes curriculum and instruction, staff personnel, student personnel, finance and business management, school plant services, and home-school-community relations. Each functional area of content also differs according to the scope covered at teaching-learning, schoolwide, and districtwide levels. The stages in the decision-making process include: identifying the problem, defining the problem, weighing alternatives, making the decision choice, implementing the decision, and evaluating the decision. The dimension of involvement in decision making includes attention to who is involved, how often they are involved, and the level of their involvement, ranging from "make the decision" to "no involvement."

In terms of these three dimensions, research was reported regarding decision making in IGE schools schoolwide, in IIC, and in I & R Units. Findings from our empirical and observational studies revealed the IGE school to be generally effective in establishing the range of content of decisions covered, in utilizing at least the initial stages of the decision-making process, and in increasing the number, frequency, and level of persons involved in making educational decisions.

From the findings, several suggestions were made for improving decision making in IGE or other schools. The chapter concluded with several research questions. The answers to these questions might significantly enhance our understanding of decision making in educational organizations.

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Chapter VI

IGE AND THE RENEWAL OF EDUCATION

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In this concluding chapter we look across the current educational scene and examine the impact of the studies of administrative and staff relationships in IGE schools for improving administrative, teaching, and learning processes in the elementary and secondary schools of the future.

This chapter contains some observations and implications that relate to each of the preceding chapters—the system of IGE, IGE as an educational change, organizational structure, leadership, and decision making in IGE schools. These concluding comments should be of immediate help to personnel in IGE schools, as well as to practitioners and professors in education generally.

The System of IGE

Our studies have revealed that the principles and practices of IGE as an educational system are generally not well understood—as in the case of the school superintendent who continually referred to the "IGA" program in one of his schools. Even in some excellent IGE schools, the interlocking components of the system are not adequately internalized and, in some cases, not appropriately implemented. For example, some school staffs were not accurately informed about the substance of the seven components during awareness, commitment, and changeover phases of implementation, and many did not realize what extensive changes were called for to implement IGE (Evers, 1974; Goodridge, 1975; Holmquist, 1976). Moreover, subsequent staff development and inservice activities required for refinement and renewal were seldom sufficient—particularly for incoming staff members (Kawleski, 1977; Moyle, 1977; Sheridan, 1974). Several of the schools, therefore, tended to place undue emphasis on one or more of the components to the neglect or exclusion of the others (Ironside, 1973). In still other schools, attempts to implement IGE were made in only one curricular area, such as reading.

Deviations from the prototypic IGE model are to be expected, since no two schools, even in the same district, are alike. Because of differences in size, policies, procedures, personnel, and other variables, some flexibility in interpretation and implementation of IGE is desirable. The great variation in implementation by early adopters, however, undoubtedly caused a ripple effect among outside observers, creating among them some unique, if not inaccurate, perceptions of what IGE is all about.

Many of the training materials for IGE, particularly those produced by the R & D Center (Fruth & Evers, 1976) and the University of Wisconsin/Sears-Roebuck Foundation IGE Teacher Education Project (Klausmeier, 1976), are useful for teaching basic concepts in administration and education generally. It has been interesting, therefore, to observe the initial reactions of present and prospective principals and other educators regarding IGE when it has been introduced in general courses and seminars in educational administration and supervision. Many tend erroneously to equate IGE with "individualized instruction" in the programmed learning mode, and place undue emphasis on academic achievement, excessive evaluation, programmed texts, teaching machines, and other modes of "learning alone." In the field of education generally, some who hold such views have criticized individualized schooling. Still others hold opposing orientations attack IGE as equivalent to "open education," with unclear or idiosyncratic objectives, lack of teacher and student discipline, random activities, and general "educational noise." Of course, neither of these extreme views is correct. Instead, the system of IGE represents a balanced approach to improved administrative and instructional purposes, patterns, and processes (Hull, 1973) so that the personal and professional development of the staff and the cognitive, affective, and psychomotor development of the students may be improved (Klausmeier, Quilling, & Sorenson, 1971).

Less defensible, but surely as stultifying, is the common perception that IGE is viable only in elementary schools. This view is understandable because IGE initially was designed, developed, and disseminated as an elementary educational system. Even so, the tendency of secondary school personnel to reject an innovation out of hand because it was first utilized at the elementary level is simplistic stereotyping that must be overcome if education is ever to be improved. Most secondary schools with which we are familiar are impersonal, mechanistic bureaucracies that could well afford additional attention to individual students, teachers, and others.

Another negative reaction to IGE which deserves comment is the claim that IGE has been proposed as a panacea for all problems plaguing education. Hence, IGE is rejected because it is perceived as "the" solution to be "laid on." Instead, IGE is a dynamic system that is continually being reviewed, researched, refined, and renewed. In the future, many modifications may be made to render IGE concepts and components appropriate for implementation in schools of varying size, level, and other important characteristics.

Finally, observations should be made about the tendency, particularly among late adopters, not to accept any innovation until its efficacy can be proven without doubt. Since the field of education has been fraught with faddism, sound safeguards are indeed appropriate at national, state, district, and local school levels. Most of the existing mechanisms for evaluating and endorsing innovations at this time (Joint Dissemination and Review Panel [JDRP], 1978), however, seem more aptly designed for making minor modifications than they are for mounting major changes in education. Piecemeal approaches to approving minor curricular products are not appropriate for evaluating total system changes. For this reason the R & D Center is now engaged in a large-scale, nationwide evaluation of the effectiveness of IGE in elementary schools (Romberg, 1979).

Lest the reader view the foregoing observations about IGE as unduly defensive, suffice it to state simply that emphasis on the individual is an idea in education whose time has come. In the field of special education, for example, Individualized Educational Programming (IEP) is now mandated (Section 504 P. L. Regulations, 1977) and many general educators are sincerely struggling to comply with laws and regulations that will require instructional programming for the individual student, pre-school through high school, for some time to come. This is entirely appropriate, since each student, whether in special or general education, has unique educational needs. Whether IEP or IGE, educators should seize upon the opportunity to make the process of schooling more personalized. It was in keeping with this thrust, for example, that the name of the R & D Center was changed in 1978 from the Wisconsin Research and Development Center for Cognitive Learning to the Wisconsin Research and Development Center for Individualized Schooling. Studies in several sectors of the R & D Center are continuing to investigate individualized schooling as a major educational change.

IGE as an Educational Change

IGE has been a particularly productive program for the analysis of major educational change—especially among initial adopters. That is, the findings of the studies reported in Chapter 2 may have been as much due to the early enthusiasm for the innovation as to the substance of the program itself. During the early 1970's IGE received considerable nationwide attention. The extent to which the findings regarding the adoption and implementation of IGE can be generalized to other major educational innovations should therefore continue to be explored. It would be instructive, as well, to examine the change to IGE, not only during the early stage of enthusiasm, but also during Thelen's (1964) subsequent stages of vulgarization (adaptation) and spread (diffusion).

A recent study by Gaddis (1978) of the reasons why several schools abandoned IGE is revealing. She found that IGE was discontinued not so much because of the quality of the system but because of inadequate understanding of its components; only partial implementation of the organizational structure; inadequate financing, turnover of the principal and staff; inadequate staff development programs; and lack of understanding, interest, and support on the part of parents, citizens, central office personnel, superintendents, school board members, and others. What program could succeed under such conditions?

Another caution about change deserves comment. The conditions in a school which led to the early adoption of an innovation may differ from those required for its refinement and renewal. That is, the tendency may exist, particularly among early adopters, to abandon a change before it has realized its full potential—to move on to something else more exciting. The motivations that Goodridge (1975) discovered for adopting IGE, while acceptable, might be somewhat less than adequate over the long haul required to refine and renew an innovation in education. Currently, several significant studies are underway in the R & D Center (Fruth & Davis, 1979) to examine the implementation of IGE as an educational change in selected elementary schools over sustained periods of time.

Another line of inquiry regarding educational change that has not received serious study is the impact of adopting IGE on other schools in the same or neighboring districts. For example: What happens to students educated in the IGE mode when they move into traditional junior and senior high schools? What happens in other schools of the area when some schools implement IGE? Our informal observations indicate substantial waste of time, effort, and energy in such circumstances. Present and projected work by Klausmeier (1979) is directed toward examining the effects of implementing IGE, not only in elementary schools, but also in middle, junior, and senior high schools to assess its impact on students' cognitive and affective development throughout their years of schooling. These studies of the teaching-learning process, when coupled with studies of the administrative process (Lipham, 1979), possess considerable potential for improving the organization, operation, and outcomes of the schools.

Aside from studies of the implementation of IGE at the local level, additional investigations of IGE seem appropriate at state, national, and international levels. As indicated in Chapter 2, IGE initially was diffused and adopted in elementary schools throughout the United States over a very brief period of time—despite short-term financing, limited resources, unclear roles, and inadequate articulation between and among educational linkage agents (Paul, 1974). It may well be that our existing theories of change are inadequate to explain the myriad complex ideological, political, economic, sociological, and psychological forces impinging upon educational change. Generally, our existing change theories tend to focus almost exclusively upon the technical level (teaching-learning) and the managerial level (administrative) while ignoring the institutional level (societal) of the organization (Parsons, 1958) and the articulations needed between and among the levels if major change in an organization is to take place.

IGE and School Organization

From the studies of the multiunit school reported in Chapter 3 several observations should be made for improving the organization of the schools. These relate both to role relationships and structural-outcome relationships in education.

Regarding role expectations and perceptions, the system of IGE, with emphasis on the multiunit school as described in Chapter 1, undoubtedly seems excessively prescriptive to many. To some extent this may be true, but serious study of the multiunit model will reveal that what is prescribed is not role rigidity, but role enlargement, complementarity, and flexibility. Surely, these are the desirable features of any effective organization (Argyris, 1957). To be able to express interests, utilize expertise, interact effectively, and otherwise increase identification and belongingness in an organization, while at the same time contributing to its rationality, are universally desirable ends (Getzels, Lipham, & Campbell, 1968).

As reported in Chapter 3, changes in the roles of superintendents, central office personnel, principals, unit leaders, and teachers and their concomitant groups in the multiunit school organization may simply be reflective of improvements needed in any school. In general, they reveal the need in schools for appropriate sharing and use of power and influence (Feldman, 1977; Moyle, 1977); mutual agreement on role expectations (Davis, 1977; Sheridan, 1974); two-way communication and representation of constituencies (Kawleski, 1977; Nerlinger, 1975); and clear operating procedures (Holmquist, 1976; Smith, 1972). Substantial studies are still needed, however, regarding the horizontal as well as vertical role relationships in IGE and other schools. Such studies (Lipham, 1979) are projected in future work at the R & D Center.

The multiunit IGE school was shown in Chapter 3 to be a dynamic, organic organization. As such, it was higher in complexity; lower in centralization, formalization, and stratification; and higher in adaptiveness, motivation, and staff and student satisfaction than was the traditional school (Gramenz, 1974; Herrick, 1974; Mendenhall, 1977; Walter, 1973;). In terms of Hage's (1965) axiomatic organizational theory, therefore, one might question whether or not the IGE school can be so dynamic while at the same time be productive and efficient, as the original model (Klausmeier et al., 1971) proposed.

From several studies, we conclude that the IGE school can be both organic and productive—calling into consideration the limits axiom of organizational theory as applied to the school which explains that many of the relationships may be curvilinear rather than linear. For example, Sigurdson (1976) found students' scores in reading and mathematics achievement in IGE schools to compare favorably with national norms. Moreover, a subsequent cross-analysis of his data on achievement with those of Bocian (1976) on students' self-concept revealed, not surprisingly, that student achievement was significantly and positively related to student attitudes toward themselves and others (Sigurdson & Bocian, 1978). Hence, contrary to the organic-mechanistic typologies in axiomatic organizational theory, it may be logical to assume that emphasis in education on affective variables actually enhances achievement and efficiency, not only of students, but of staff as well.

Just as issues can be explored concerning the productivity of IGE schools, so also can questions be raised regarding their economic efficiency. Generally, studies of implementation costs have revealed that after initial expenditures for staff development IGE is no more expensive than any other form of education (Evers, 1973). The relationships between costs and benefits in education, however, continue to pose perplexing theoretical and methodological issues that are being further explored and examined in studies at the R & D Center (Rossmiller & Frohreich, 1979) regarding the interrelationships of inputs and processes to the outcomes of educational leadership in the schools.

IGE and Educational Leadership

Studies of leadership of IGE schools have been particularly productive from a theoretical perspective in that they have examined leadership in relation to educational change. They have been productive from a practical point of view in that they have examined both positional and emergent leadership.

It is apparent from our studies that differential leadership behaviors are required at different phases of the change process. Early in the implementation of a major change such as IGE, for example, the leadership behaviors required of the principal and others places great emphasis on participative leadership (Goodridge, 1975; Gramenz, 1974). During the awareness and commitment activities, including needs assessment, issue exploration, and information sharing about possible programs to meet needs, many must participate in decision making (Evers, 1973; Nerlinger, 1975).

During the following stage of changeover, however, the primary role of the principal and other leaders shifts to supportive leader behavior—providing psychological and personal support to those struggling with change (Holmquist, 1976; Howes, 1974; Smith, 1972).

As implementation of the program proceeds, instrumental leadership is required to reinforce, establish, and institutionalize the innovative program. Our research findings (Moyle, 1977; Neiner, 1978) and informal observations reveal that the failure of some principals to shift to instrumental leadership behavior at this juncture can be indeed dysfunctional. As staff members become busily engaged in new roles and activities demanded by the program, for example, they do not want high engagement in participative decision making—or as one leader put it, "re-deciding decisions." Instead, the need exists to have the previously made decisions clarified, codified, and enforced (Watkins, 1978)—otherwise, the staff experiences early "burn out" (Neiner, 1978).

During the refinement and renewal phases of change it becomes exceedingly important for the principal, unit leaders, and others to return to a participative leadership style (Kawleski, 1977; Moyle, 1977). Again, some leaders unfortunately appear unable to sense this needed shift, hence their programs retreat and regress instead of becoming refined and renewed. In short, our studies have shown that those who would be leaders in education must not only display certain essential leadership behaviors, but must also vary them according to the demands made during the different phases of change.

Further research on the relationship between leadership and change can probably best be conducted in case studies of schools that have successfully implemented an innovation over sustained periods of time. Hence, projected studies in the Administration and Organization Research Unit of the R & D Center (Artis, in press; Brittenham, in press; Zimman, in press) will investigate the multiple relationships of leadership to change and other variables required to make schooling successful.

Our studies of leadership have also shown that stereotypes do exist for leadership behavior in specific social roles and these must be at least minimally fulfilled. Principals, for example, must exhibit high instrumental leadership in many situations (Moyle, 1977), whereas unit leaders must not primarily do so (Kawleski, 1977). Yet some adminstrators are still encountered who, as Halpin (1958, p. 2) noted twenty years ago, fail to exercise instrumental leadership—hiding their ineptness in the "soggy oatmeal of a pseudo group process." In our studies of IGE schools, successful principals, unit leaders, and others had not only internalized the major leadership behaviors expected of their roles, but also, within these expectations, were able to vary their leadership styles as situations in the change cycle demanded. Such situations, particularly in the IIC, represented the essence of effective team management.

A final observation should be made regarding emergent, as opposed to positional, leadership. Although our leadership studies primarily focused on the positional leadership of principals and unit leaders in IGE schools, leadership was shared within, between, and among groups in the same way that decision making was shared (Holmquist, 1976; Kawleski, 1977; Moyle, 1977; Nerlinger, 1975). Teachers, in particular, testified to their increased recognition as emergent leaders, not only in matters of instruction, but also in the functional areas of staff and pupil personnel, finance, and home-school-community relations (Feldman, 1977; Wright, 1976). Such emergent leadership on the part of teachers and others is to be encouraged in most major functional areas of educational decision making.

IGE and Educational Decision Making

Studies of decision making in IGE schools have been revealing from both theoretical and practical perspectives. Using decision theory, decision making can be conceptualized like leadership in terms of its frequency, potency, scope, and style (Lipham, 1973). These variables may help us better to understand such established decision-making concepts as content, stages, and involvement in decision making (Lipham, 1974).

Most current treatments tend to equate the frequency of decision making with decision involvement and measure it along a continuum ranging from "very frequently involved" to "seldom involved." Such studies are designed to determine degrees of decision saturation or deprivation. Direct observation of decision-making groups by Holmquist (1976), Kawleski (1977), and Moyle (1977), however, suggests that groups may meet and interact frequently, but on trivial issues limited in potency and scope. Hence, a projected study of decision making in schools (Speed, 1979) will examine not only frequency of involvement but also the extent of involvement in decision making ranging from "never involved" to "always involved" and from "no involvement" to "make the decision."

As with the variable of leadership potency so also should decision potency be examined in relation to such types of decisions as routinized and mechanistic, hierarchical and apellate, bargained and negotiated, or heuristic and creative (Lipham & Hoeh, 1974, pp. 162-165). Studies of decision making in IICs (Holmquist, 1976; Moyle, 1977), for example, found decision-making behavior to vary greatly, depending upon the complexity of the decision, individual stakes in outcomes, and the perceived importance or potency of a decision. The following kinds of practical questions might be explored: Does the principal "saturate" the staff with decisions low in potency? Does the principal reserve the right to make final decisions on issues high in potency? Do group decision-making processes, interactions, and behaviors change as the potency of issues increases? Is there delay, or even avoidance, in making potent educational decisions?

Decision scope refers both to the earlier concept of decision content (the range of curricular, staff personnel, student personnel, finance, and home-school-community functions included) and to the level of the organization at which the decision is made (teaching-learning level, schoolwide level, and districtwide level). As Feldman (1977) and Wright (1976) discovered, content and scope interact to shed considerable light on centralization and decentralization of decision making in organizations. Regarding centralization of decision making, the multiunit IGE school poses an interesting paradox. On the one hand, the IGE school becomes decentralized since schoolwide decisions are no longer the prerogative of the principal but are shared with unit leaders and others. On the other hand, the IGE school becomes somewhat centralized since instructional decisions are no longer the prerogative of the individual teacher but are shared with the total staff of the unit. Further study of decentralization in terms of decision scope is needed. For example, teachers in IGE schools were satisfied with their involvement in making decisions of unit scope, but dissatisfied with their involvement in issues of schoolwide and districtwide scope. In an era of increasing teacher activism, the following question in education becomes central: How satisfied are teachers in general with decision frequency, extent, and scope?

Our current theories of decision-making style tend to view it as a rational, simplistic, individual process, rather than a dynamic, phenomenological, group process. In fact, the current developmental stage in the study of decision-making styles seems analogous to the early traitist stage in the study of leadership. Although our work in this domain is only exploratory, considerable confusion exists concerning desirable decision behavior in the schools. Regardless of the scope, potency, content, or level of a decision, the norm is to utilize a total group participation style, causing considerable delay and dissatisfaction. Additional understanding of decision theory and further training in decision-making skills seem warranted.

Another practical suggestion to improve decision making pertains chiefly to principals. Some seem to feel that their frequent sharing of potent decisions with planning and policy-making groups such as the IIC tends to devalue their role to that of a "gutless lackey." Nothing could be further from the truth. Principals of successful schools involve others appropriately in decision making and better decisions result.

For a final practical implication we return to the model of IGE which holds that shared decision making at all levels of the school is desirable (Klausmeier et al., 1971). In our studies of administrative and staff relationships, it was interesting to observe the extent to which this norm had been internalized. To gain access to do research in a school we usually contacted the principal by letter or telephone, and the typical answer was, "I'll check that decision with my IIC." In retrospect, had we had the foresight to do comparisons or drop from the studies those IGE schools where the principal arbitrarily "committed" the staff to participate, then our results, particularly regarding staff "participation" and "commitment," might have been even more revealing.

In IGE, the multiunit organization also calls for substantial input and involvement in decision making by many people. Yet parents and citizens are only slightly involved, and students still largely excluded from making potent educational decisions in elementary schools. We hope that we will not find this the case as we study individualized schooling in secondary schools.

Conclusion

As a final footnote, we realize that many conceptualizations other than theories of change, organization, leadership, and decision making can be used productively to investigate administrative and staff relationships in the schools. Also, alternative major educational innovations other than IGE could have been examined. In this regard, however, no investigator is ever completely impartial, since selection of the concepts to be used and the system for study requires considerable commitment that they are worth examining in the first place. It is hoped, therefore, that the findings, whether compatible or contradictory, will contribute to our understanding of the theories examined. Likewise, it is hoped that the implications, whether general or specific, will contribute to the refinement and renewal of education.

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Abstract

EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTION AND RESEARCH UNIT AND STUDENT AFFECTIVE BEHAVIOR IN IGE SCHOOLS

Barbara Helen Bocian
Under the Supervision of Professor James M. Lipham

The purpose of this study was to determine the degree of relationship between the effectiveness of the I & R Unit in the areas of (1) Instructional Program (Reading and Mathematics), (2) Organizational Operations (Procedural and Substantive), (3) School-Community Relations, and (4) Staff Development to several measures of Student Affective Behavior in IGE schools. The framework for the study was that of general systems theory, social systems theory, and self concept theory. The first seven major null hypotheses were tested by the following general hypothesis:

> There is no significant multiple correlation between the effectiveness of the I & R Unit (1) Instructional Program (Reading), (2) Instructional Program (Mathematics), (3) Organizational Operations (Procedural), (4) Organizational Operations (Substantive), (5) School-Community Relations, and (6) Staff Development and (Student) Self Acceptance, Self Security, Social Maturity, Social Confidence, School Affiliation, Teacher Affiliation, and Peer Affiliation.

The second seven major hypotheses were tested by the following general hypothesis:

> There is no significant relationshp between Total I & R Unit Effectiveness and (Student) Self Acceptance, Self Security, Social Maturity, Social Confidence, School Affiliation, Teacher Affiliation, and Peer Affiliation.

Data were collected from I & R Units from 42 multiunit IGE elementary schools in 13 different states. This included 179 intermediate level teachers and 1,409 students.

The instrumentation for this study consisted of the I & R Unit Operations Questionnaire and the Self Observation Scales (SOS), Intermediate Level, Form C. The I & R Unit Operations Questionnaire provided data for determining the extent of role fulfillment of the staff. The dependent variable, student affective behavior, was measured by the SOS which provided seven measures of self concept. In general, staff members of IGE schools perceived their I & R Units to be "effective." In general, the self concept scores of students in IGE schools were equal to or slightly higher than the national norm group of students in non-IGE schools.

A multiple stepwise linear regression analysis was used to test the first seven hypotheses, and a Pearson product-moment correlation was used to test the last seven hypotheses. The probability level for all tests of significance was established at .05.

The major conclusions were:

(1) There is no significant multiple correlation between any of the independent variables and (Student) Self Security, Social Maturity, Social Confidence, School Affiliation, and Peer Affiliation.

(2) A significant amount of variance in (Student) Self Acceptance was explained by I & R Unit Organizational Operations (Substantive) and I & R Unit Organizational Operations (Procedural).

(3) A significant amount of variance in (Student) Teacher Affiliation was explained by I & R Unit Organizational Operations (Substantive) and I & R Unit Organizational Operations (Procedural).

(4) There is no significant relationship between I & R Unit Total effectiveness and any of the measures of student affective behavior.

Based upon the findings, some suggestions for further research and practice in this domain were tendered.

DATE: May 18, 1976

Abstract

PERCEIVED ROLE AND EFFECTIVENESS OF SCHOOL PSYCHOLOGISTS IN IGE SCHOOLS

Kenneth Parks Davis
Under the Supervision of Professor James M. Lipham

The purposes of study were: (1) to determine if differences exist in role expectations held for the functions of school psychologists on the part of principals, unit leaders, teachers, and school psychologists in IGE schools; (2) to determine the relationship between agreement on expectations and ratings of the performance effectiveness of school psychologists; and (3) to determine relationships between the performance effectiveness of school psychologists and several organizational variables. The conceptual and theoretical foundations for the study were social systems theory and role theory.

Social systems theory and role theory were utilized in hypothesizing that (1) no differences exist between principals, unit leaders, unit teachers, and school psychologists regarding role expectations held for the school psychologist role, and (2) there is a positive relationship between agreement on role expectations and ratings of performance effectiveness.

Tasks typically performed by school psychologists were identified from the literature and practice and reduced to a survey instrument containing 35 tasks. The School Psychologist Role Analysis (SPRA) was pilot tested for validity and reliability and the final instrument contained tasks for the following five functions of the school psychologist: consultant, diagnostician, therapist, educational programmer, and researcher roles.

Data were collected from 45 multiunit IGE schools in 20 states. This included 45 principals, 137 unit leaders, 133 unit teachers, and 42 school psychologists. Mean scores were computed for the data. Analyses of variance, t-tests, and Pearson product-moment correlations were used to test the hypotheses of the study. The probability level for all tests of significance was established at .05.

The major conclusion of the study were as follows:

1. There were no significant differences between principals and school psychologists regarding the role expectations of the school psychologist.
2. There were significant differences between unit leaders and school psychologists for the functions of consultant, diagnostician, and therapist in the school psychologist's role.

3. There were no significant differences between unit teachers and school psychologists regarding the role expectations of the school psychologist.
4. There was no significant relationship between principal and school psychologist agreement on expectations for the school psychologist and principals' ratings of performance effectiveness of the school psychologist.
5. There was a statistically significant relationship between unit leader and school psychologist agreement on expectations for the school psychologist and unit leaders' ratings of performance effectiveness of the school psychologist.
6. There was a statistically significant relationship between unit teacher and school psychologist agreement on expectations for the school psychologist and unit teachers' ratings of performance effectiveness of the school psychologist.
7. No statistically significant relationships were found for principals, unit teachers, and school psychologists between selected organizational variables and the effectiveness of the school psychologist.
8. Unit leaders' ratings of the performance effectiveness of the school psychologist were significantly correlated with contact with the school psychologist, and the number of teachers in the unit correlated significantly with the educational programmer and consultant functions of the psychologist.

Concerning practice, it was suggested: (1) that communication and contact should be increased among unit leaders, unit teachers, and school psychologists; (2) that the organizational model and school psychologist role be further examined and refined; and (3) that dimensions of the SPRA be examined for their relevance to problems in selection and utilization of school psychologists in IGE and other schools.

DATE: December 2, 1977

AN ANALYSIS OF THE RELATIONSHIP BETWEEN THE EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTION AND RESEARCH UNIT AND INTERPERSONAL BEHAVIORS

Nancy Ann Evers
Under the supervision of Professor Marvin J. Fruth

The purpose of this study was to determine the interrelationships of I & R unit effectiveness to I & R unit member compatibility, the unit leader's leader behavior, and the level of task structure as perceived by I & R unit members. The framework for the study was drawn from Shaw's classification of small group variables, social systems theory, Schutz's theory of interpersonal compatibility, and House's path-goal theory of leadership. The following major hypothesis was tested:

> There is no significant relationship between I & R unit effectiveness and the interrelationships of (1) I & R unit member compatibility, (2) the unit leader's Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior, and (3) the level of task structure perceived by I & R unit members.

The following ancillary hypotheses were tested:

1. There is no significant relationship between I & R unit effectiveness and the number of I & R unit members.
2. There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week.
3. There is no significant relationship between I & R unit effectiveness and the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy.

Data were collected from 163 I & R units from 45 multiunit elementary schools in 12 different states.

The instrument developed and adapted for this study consisted of five parts: "Background Data;" "FIRO-B" (Fundamental Interpersonal Relations Orientation-Behavior Questionnaire); "I & R Unit Operations Questionnaire;" "Task Structure;" "Unit Leader Behavior Description." The "I & R Unit Operations Questionnaire" was developed to measure I & R unit effectiveness; no measures previously existed for this purpose. Modifications of House's measures of task structure and leadership behavior were made for this study.

A multiple stepwise linear regression analysis was used to test the major hypothesis and to examine an expanded regression model for I & R unit effectiveness. A Pearson product-moment correlation was used to test the ancillary hypotheses. The probability level for all tests of statistical signifiance was established at .05.

The major conclusions were:

1. Of the variables considered, I & R unit member compatibility, the unit leader's Instrumental Leadership behavior, the unit leader's Supportive Leadership behavior, the unit leader's Participative Leadership behavior, and the level of task structure, only leader behavior significantly influenced each of the eight measures of I & R unit effectiveness.

2. The amount of variance explained is significantly increased by Instrumental Leadership behavior in I & R unit total effectiveness, I & R unit instructional program (I & II) effectiveness, I & R unit instructional program (I) effectiveness, I & R unit instructional program (II) effectiveness, I & R unit organizational operations (procedural) effectiveness, I & R unit organizational operations (substantive) effectiveness, and I & R unit staff development effectiveness (all measures of I & R unit effectiveness except I & R unit school-community relations effectiveness).

3. When workshop participation is added to the models, the amount of variance explained is significantly increased by Instrumental Leadership behavior in each of the eight measures of I & R unit effectiveness.

4. The amount of variance explained is significantly increased by I & R unit member workshop participation in I & R unit total effectiveness, I & R unit organizational operations (procedural) effectiveness, I & R unit organizational operations (substantive) effectiveness, I & R unit school-community relations effectiveness, and I & R unit staff development effectiveness.

5. There is no significant relationship between I & R unit effectiveness and the number of I & R unit members.

6. There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week.

7. The percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy is significantly related to each of the following: I & R unit total effectiveness; I & R unit organizational operations (procedural) effectiveness; I & R unit organizational operations (substantive) effectiveness; I & R unit school-community relations effectiveness; I & R unit staff development effectiveness.

DATE: May 6, 1974

Abstract

INVOLVEMENT IN AND SATIFACTION WITH DECISION MAKING RELATED TO STAFF AND STUDENT BEHAVIOR IN IGE SCHOOLS

Robert Howard Feldman
Under the supervision of Professor James M. Lipham

The purpose of this study was to examine the assumption that teacher involvement and satisfaction with decision making were systematically related to organizational effectiveness criteria of teacher job satisfaction, student achievement in reading and mathematics, and student affective behavior in multiunit elementary schools that have implemented Individually Guided Education (IGE).

The theoretical and conceptual foundation for this study included three basic theories—general systems theory, social systems theory, and decision theory. The school was considered as a general system, where inputs are transformed into outputs. Decision theory was integrated with social systems theory to analyze the relationship between the independent and dependent variables. Social systems theory provided a framework for analyzing effectiveness of productivity in terms of teacher job satisfaction, student achievement in reading and mathematics, and student affective behavior.

The independent variables were involvement in and satisfaction with decision making as measured by the Decision Involvement Analysis Questionnaire. The dependent variables were teacher job satisfaction as measured by the Teacher Job Satisfaction Survey; student achievement in reading and mathematics as measured by the Comprehensive Test of Basic Skills, Form S; and student affective behavior as measured by the Self Observation Scales (SOS), Intermediate Level, Form C.

Data were collected from 41 I & R units meeting specified criteria and selected at random from a national population of 959 multiunit IGE elementary schools in 13 different states. Unit mean scores were computed for the data. Pearson product-moment correlations and multiple regression equations were used to test the hypotheses of the study. The probability level for all tests of significance was established at .05.

The major conclusions were as follows:

1. Unit teachers' perceptions of the extent of involvement in decision making was systematically and significantly related to teacher job satisfaction.

2. Unit teachers' perceptions of the extent of involvement in decision making was not systematically and significantly related to student achievement in reading, mathematics, or student affective behavior.
3. Unit teachers' perceptions of satisfaction with decision making was systematically and significantly related to teacher job satisfaction.
4. Unit teachers' perceptions of satisfaction with decision making was not systematically and significantly related to student achievement in reading, mathematics, or student affective behavior.

Based upon these findings, suggestions were offered for further research on the types of decision structures and the decision-making process in IGE schools.

DATE: November 24, 1976

FACTORS THAT INFLUENCE THE DECISION TO ADOPT AN EDUCATIONAL INNOVATION: IGE

Charles G. Goodridge
Under the Supervision of Professor James M. Lipham

This study focused on the identification of those people who made the final decision to adopt Individually Guided Education (IGE), and factors that influenced that decision. The theoretical basis for the study was decision theory, linkage theory, and an adaptation of the adoption phase of change theory.

Field methodology was employed to conduct the study in eight geographically distributed schools which had adopted IGE in the preceding twelve month period. Methods utilized to collect data included semi-structured, open-ended interviews. The reputational technique was used to identify decision makers and their perceptions of influential factors relating to the adoption of IGE.

The data were categorized, coded, and tabulated by a process of content analysis. Coding consistency was established by the use of independent researchers. Findings were presented for each school for each research question.

The major conclusions were:

1. Principals were the major decision makers concerning the decision to adopt IGE. In a majority of the schools this decision was shared with staff teachers.
2. The superintendent was not a participant in making the adoption decision in any of the schools where the major decision makers were the principal and the staff.
3. Board members, office personnel and parents were minimally involved in the adoption decision process.
4. Individualization of instruction, related to the IGE program, was the major reason for the adoption of IGE.
5. The adoption of IGE for prestige, for keeping up with current trends, or for an accompanying gain in funding were important reasons for the adoption of IGE.
6. There was a lack of awareness on the part of some teachers regarding the seven components of IGE.
7. School boards were often prepared to let others decide about educational programs if no extra cost were involved.

8. The most influential and successful external change agents were teachers from other IGE schools who were viewed as credible.

9. Consultants and IGE facilitators were viewed as making unreal, idealistic presentations, and their credibility was often challenged.

10. In none of the cases was decision making shared among board members, superintendents, principal, staff and parents. When decision making was shared, it was between no more than two levels in the organization.

11. Teachers were not usually offered the opportunity to transfer to another school if they did not desire involvement in the adoption of IGE.

12. When the research data were collected, many decision makers considered that the amount of information available to them had been inadequate, although at the time of adoption they had considered themselves well informed concerning IGE.

13. Where visits to IGE schools were arranged they had a very positive effect on the decision to adopt IGE.

Implications

Linkage theory did not describe adequately the adoption process. The concepts of social influence networks and reciprocal feedback between resource and user systems were not reflected in the research data. The role of IGE facilitator was not found to be effective in the adoption of IGE.

It was suggested that the study be replicated in a larger sample of schools and suggestions were made concerning research in the field of change agent effectiveness, decentralized decision making, and information search as part of the decision process. Implications were presented relative to the R & D perspective on adoption of IGE and the school considering adoption of IGE.

DATE: December 1, 1975

RELATIONSHIP OF PRINCIPAL LEADER BEHAVIOR AND ORGANIZATIONAL STRUCTURE OF THE IGE/MUS-E TO I AND R UNIT EFFECTIVENESS

Gary William Gramenz
Under the supervision of Professor Richard A. Rossmiller

This study was designed to investigate the interrelationships between the leader behavior of IGE/MUS-E principals, the organizational structure of IGE/MUS-Es as measured by their degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units. The framework for the study was drawn from social systems theory, leadership theory, and Hage's axiomatic theory of organizations.

The primary purpose of the study was to determine which of the independent (predictor) variables—principal leader behavior and the organizational-structural dimensions—related significantly to the dependent (criterion) variable, I and R unit effectiveness. The specific problems addressed by the study were first, to determine the relationship between principal leader behavior and I and R unit effectiveness; second, to determine the relationship between principal leader behavior and the organizational-structural dimensions; and third, to determine the relationship between the organizational-structural dimensions and I and R unit effectiveness.

In addition, five ancillary questions were posed which dealt, respectively, with differences between the perceptions of principals, unit leaders, and unit teachers with regard to the real and ideal leader behavior of principals, the organizational-structural dimensions, and I and R unit effectiveness; and the relationship between school size (number of students) and the independent and dependent variables.

The survey instrument used in this study consisted of three sections: (1) Principal Leader Behavior Description, (2) Organizational Structure, and (3) I and R Unit Operations Questionnaire. Pearson product-moment correlations and stepwise linear regression analysis were utilized to test the hypotheses, one-way (fixed-effects) analysis of variance to test ancillary questions one through four, and Pearson product-moment correlations to test the final ancillary question.

The major conclusions were:

1. With the exception of the correlation between the degree of formalization and I and R unit effectiveness, there were no significant relationships between principals' perceptions of the independent and dependent variables, nor were any of the independent variables significant predictors of unit effectiveness. Nevertheless, the organizational mean of formalization, which explained 9.46 per cent of the variation of the dependent variable, is of substantive interest.

2. With the exception of the correlations between (a) the instrumental and supportive leadership effectiveness of principals and the degree of centralization and (b) those between supportive and participative leadership effectiveness and the degree of formalization, there were significant relationships between unit leaders' perceptions of the independent and dependent variables. In addition, the organizational-structural dimensions were significant predictors of I and R unit effectiveness. Formalization and centralization were of nearly equal potency to the regression equation, whereas stratification was somewhat less potent.

3. With the exception of the correlations between the supportive and participative leadership effectiveness of principals and the degree of formalization, there were significant relationships between unit teachers' perceptions of the independent and dependent variables. In addition, the organizational means of centralization and formalization and the instrumental and supportive leadership effectiveness of principals were significant predictors of I and R unit effectiveness. Centralization was the most potent variable in the regression equation, followed by formalization and supportive leadership effectiveness, which were of nearly equal potency, and instrumental leadership effectiveness.

4. There were significant differences between (a) perceptions of principals and unit leaders with regard to the ideal instrumental leader behavior of principals, (b) perceptions of principals and unit teachers with regard to the real supportive leader behavior of principals and the degree of stratification, and (c) perceptions of principals and unit leaders, and principals and unit teachers, with regard to the real participative leader behavior of principals and the degree of centralization. In addition, there was a significant relationship between school size and the three reference groups' perceptions of the degree of centralization.

DATE: August 21, 1974

THE RELATIONSHIP OF ORGANIZATIONAL STRUCTURE TO TEACHER MOTIVATION IN MULTIUNIT AND NON-MULTIUNIT ELEMENTARY SCHOOLS

H. Scott Herrick
Under the supervision of Professor James M. Lipham

This study was designed to examine the relationship of organizational variables to teacher motivation to perform. It also sought to determine what differences, if any, existed between the organizational structures of multiunit (MUS) and non-multiunit (NMUS) IGE elementary schools.

The unit of analysis consisted of MUS and NMUS elementary schools in the State of Wisconsin which employed ten or more staff members during 1971-1972. The population consisted of schools which had implemented the multiunit elementary school concept and those that had not implemented the concept. A random sample of 40 schools was selected from each subpopulation and a total of 34 MUSs and 38 NMUSs participated in the study. A random sample of fifteen teachers was selected from each school to provide the data.

Organizational structure was defined in terms of Hage's axiomatic theory of organizations. School means of complexity, centralization, formalization, and stratification, along with school size, were used to describe the organizational structure of each school. Teacher motivation was defined in terms of the organization's reward system measured by the expectancy theory delineated by Vroom and Porter and Lawler. Expectancy theory states that motivation or effort to perform is a multiplicative function of the probability of receiving a particular reward and the importance of the reward to the individual.

Sixteen hypotheses were formulated to answer the following general questions:

1. Is the organizational structure of the multiunit elementary school (MUS) significantly different from that of the nonmultiunit elementary school (NMUS)?

2. Is the level of teacher motivation in the MUS significantly different from that of the NMUS?

3. Is there any significant relationship between the organizational variables of school size, complexity, centralization, formalization, and stratification and a teacher's motivation to perform?

The major findings of the study were as follows:

1. There were no significant differences between MUSs and NMUSs in school size, complexity, and formalization.
2. MUSs were less centralized, less stratified, and had more highly motivated teachers than NMUSs.
3. School size was a significant predictor of teacher motivation in both MUSs and NMUSs.
4. Complexity was a significant predictor of teacher motivation in NMUSs but not in MUSs.
5. Centralization was a significant predictor of teacher motivation in both MUSs and NMUSs.
6. Formalization was not a significant predictor of teacher motivation in either the MUS or the NMUS.
7. Stratification was a significant predictor of teacher motivation in both MUSs and NMUSs.

Based on the results of this study, it is suggested that administrators interested in developing higher levels of teacher motivation make every effort to involve teachers in the decision-making process and that they attempt to distribute rewards to teachers fairly and justly. Further research also should be conducted concerning the relationship of organizational structure variables to motivation and role performance.

DATE: April 2, 1974

A DEFINITIONAL FIELD STUDY OF DECISION MAKING IN IGE/MUS-E SCHOOLS

Albert M. Holmquist
Under the supervision of Professor James M. Lipham

The purpose of this study was to investigate and describe decision-making in IGE schools. Concepts from four selected conceptual frameworks—rational decision process, organizational structure, individual traits and values, and group interaction—were set forth as guidelines for observations. Specific questions addressed in the study were:

1. How well do existent conceptual models explain decision making in IGE schools?
2. Can a new model be developed which augments extant conceptual models of decision making?
3. What are the variables which define decision making in IGE schools?
4. What are the interrelationships of the variables which define decision making in IGE schools?
5. What hypotheses can be generated from a new model?
6. How does the new model developed from the interrelationships of variables explain decision making in IGE schools?

Data were collected from three successful diverse IGE schools. Data included primary documents, transcripts of IIC and unit meetings, and semi-structured and unstructured interviews. Each sentence in the data was severed and placed with as many of the initial concepts from each of the four theoretical approaches to decision making as it approximated and exemplified. As these referents grouped into conceptual areas, concepts were refined, redefined, and finally related to one another.

Decision processes at each school were described within the framework of the four basic theoretical frameworks. All observed decisions were then compared and contrasted within and across schools in this same framework.

A new model of decision making emerged from the data. Decision making in the IICs and unit meetings fell into four basic steps:

1. Problem articulation
2. Alternative posing
3. Alternative weighing
4. Choice

Decision making was defined as a process, influenced by group size, individual experience, and group exhortation, wherein a problem is articulated, alternative solutions are posed and weighed, and a precipitate solution is chosen.

The model was used to examine the decision-making processes observed in the three schools. It was compared and contrasted with existing theories of decision making and some modifications of these theories were suggested.

Questions concerning the applicability of the model to certain decision content items, the amount of time spent at each step in the model and the existence of typical paths through the model were finally raised. Questions were posed by this model concerning the nature of the existence of unstated decision criteria, the absence of implementation and evaluation steps in the model, the ideal size for IICs and units, the appropritate degree of group pressure needed to assure participation, and the desirability of quantifying the steps in the model.

DATE: March 30, 1976

CHANGE FACTORS RELATED TO THE INSTITUTIONALIZATION OF THE MULTI-UNIT ELEMENTARY SCHOOL

Nancy Jane Howes
Under the Supervision of Professor Donald N. McIsaac

Many schools have tried unsuccessfully in past decades to institutionalize (gain acceptance for and routinization of) needed educational and organizational changes because they have not known how to bring about these changes. This study was concerned with describing the process of bringing about change.

The purpose of this study was to: (1) identify some of the variables and critical clusters of variables of change related to the institutionalization of the organizational component of the multiunit elementary school (MUS-E); and, (2) begin to identify some of the elements of change implicitly involved in the successful institutionalization of educational change in general. The variables selected for study and the factors defined a priori were those most often analyzed by change theorists, systems analysts, and behavioral scientists.

To collect data for the study, five descriptive organizational change questionnaires were designed and distributed to a selected national sample of over 2000 unit teachers, unit leaders, principals, district coordinators and superintendents in multiunit schools and school districts. The reliability estimates for the final questionnaires were between .83 and .95, so, it was concluded that the questionnaires would be useful in describing the variables of change.

To answer the hypotheses and ancillary questions, three basis analyses (an item, a factor, and a multiple regression analysis) were used on the questionnaire data.

The factor analysis identified those change variables which clustered together to form distinct factors affecting institutionalization. It described factors which predicted between 63 and 77 percent of the total variance of institutionalization. The variables identified related to open and supportive environments, user's liking for MUS-E, user's cost-benefit decision, use of open communication channels, supportive services and resources, and flexibility of the change process.

The item analysis and multiple regression were used together to identify those global change variables which directly related to the institutionalization of MUS-E. The item analysis identified individual variables which best related to institutionalization and the multiple regression identified a cluster of variables which best related to institutionalization. Between 54 and 84 percent of the total variance of each questionnaire was explained by the combination of variables in each regression model. The variables of change which directly related to the institutionalization of MUS-E were: (1) the perceived relative advantage, observability and simplicity of MUS-E; (2) the degree to which the individual was informed, involved and supported in the change process; (3) the way and degree to which the individual communicated with others; and, (4) the way and degree to which the school organization was complex and less formalized.

Three major conclusions were developed from these findings, all of them describing a model for looking at change. First, it was concluded that the a priori factors and factor analyzed factors, though describing different sets of variables, were both useful in viewing change. The a priori factors provided an organizational theory view of change and the factor analyzed factors provided underlying characteristics describing a supportive change environment. Second, it was concluded that valid information about a change program in any organization could be best obtained if the perspectives of each of the groups in the organization were measured and integrated. Third, it was concluded that measures of change should be diverse and used selectively to obtain the information which a particular group had (rather than should have) about institutionalization. Questions about three factors of change (the process of change, the change itself, and the formal or informal organizational arrangement in which the change was being institutionalized) should be asked of all groups.

DATE: August 26, 1974

Abstract

DECISION MAKING OF THE INSTRUCTION AND RESEARCH UNIT IN IGE SCHOOLS: FUNCTIONS, PROCESSES, AND RELATIONSHIPS

Sandra Jane Kawleski
Under the Supervision of Professor James M. Lipham

The purpose of this study was to investigate the functions, processes and relationships of shared decision making in Instruction and Research (I & R) Units in IGE elementary schools. The theoretical foundations included IGE, social systems, group dynamics, leadership and decision theories.

Field methodology was employed to examine sixteen I & R Units of eight established IGE schools, diverse in location, socioeconomic level and ethnic composition. Data were collected through interviews and observation. Data were analyzed by I & R Units and across I & R Units according to the responses of the staff and were based on field notes and observations.

The major findings were:

1. The membership, modes of operation, and functions performed by the I & R Unit varied from the prototypic multiunit organizational model.

2. Group cohesiveness was high in most I & R Units. Unit members felt they derived much benefit from membership in the unit and that they had a considerable sense of togetherness.

3. The predominant communication process used during decision making was the total interaction communication network. This network became inefficient if the process was not guided by systematic methods to lessen confusion and frustration. Few organized attempts were made to clarify the issues in the decision process and to pose possible alternatives with pros and cons of each.

4. A task structure became very complex as the task tended to affect more people, especially other unit members, members of other units, and students with specific problems which appeared beyond the control of the unit teacher.

5. I & R Units were dynamic groups—high in complexity, low in centralization, low in formalization, and low in stratification.

6. Two types of group interdependence were defined for the study, planning interdependence and instructional interdependence. Units varied in the amount of interdependence they developed among unit members. Units with low interdependence patterns tended to stress planning rather than instructional interdependence.
7. Unit members did not perceive instrumental leadership as a function of the unit leader position. Instead, leaders were viewed as providing supportive and participative leadership behaviors.
8. Supportive and participative leadership behavior was important to effective functioning of the unit and to teacher satisfaction with decision making.
9. The shared decision making process in the I & R Unit was interactive, with consensus by silence being the predominant method of deciding. Occasionally, controversial solutions were subjected to vote.
10. Unit members wwere satisfied with the decision process and the decisions made at the I & R Unit level, but were less satisfied with decisions made at the schoolwide, IIC level.
11. Such organizational and personal variables as principal leader behavior, colocation of unit members, and open and amenable personal relations enhanced I & R Unit functions; and such variables as large class size, inadequate planning time, and forced staff changes hindered I & R Unit functions.

Based on the findings, several implications for practice and for future research were delineated.

DATE: August 11, 1977

Abstract

RELATIONSHIP OF ORGANIZATIONAL STUCTURE AND LEADERSHIP BEHAVIOR TO STAFF SATISFACTION IN IGE SCHOOLS

Diana Reed Mendenhall
Under the Supervision of Professor James M. Lipham

The purposes of this study were: (1) to determine the relationship of the structural aspects of the organization and leadership behavior within the organization to the organizational outcome of job satisfaction in IGE schools, and (2) to determine whether organizational structure or leadership behavior impacted more strongly on job satisfaction in IGE schools. The conceptual and theoretical foundations for the study were general systems theory, social systems theory, organizational theory, and leadership theory. The general hypotheses were tested by the following three null hypotheses:

1. There is no relationship between the organizational structure variables of complexity, formalization, stratification, and centralization and job satisfaction.

2. There is no relationship between leader support, goal emphasis, work facilitation, and interaction facilitation and job satisfaction.

3. The amount of variance in job satisfaction accounted for by the structural variables is equal to the amount of variance accounted for in job satisfaction by the leadership variables. Data were collected on site in 41 multiunit IGE elementary schools in 13 different states. This included 41 principals, 41 unit leaders, and 138 intermediate level teachers. The instrumentation consisted of the Structural Dimensions Questionnaire, the Decision Involvement Analysis Questionnaire, the Leadership Questionnaire, and the Job Satisfaction Questionnaire.

Pearson product-moment correlations were used to test the first two hypotheses and multiple stepwise linear regression was used to test the third hypothesis. The probability level for all tests of significance was established at .05.

The major conclusions were:

1. There were relationships between organizational structure and job satisfaction.

a. There was no significant relationship between complexity and job satisfaction. The direction of the relationship was mixed.

b. There was a significant negative relationship between formalization and job satisfaction.

c. There was a significant negative relationship between stratification and job satisfaction.

d. There was no significant relationship between centralization and job satisfaction. However, the relationship found was in the predicted direction.

2. There were relationships between leader behavior and job satisfaction.

a. There was a statistically significant positive relationship between principal leader behavior (support, goal emphasis, work facilitation, and interaction facilitation) and job satisfaction.

b. There was no statistically significant relationship between unit leader behavior (support, goal emphasis, work facilitation, and interaction facilitation) and job satisfaction. The direction of the relationship was mixed.

3. Organizational structure and leader behavior did not account for an equal amount of variance in job satisfaction.

a. Leader behavior accounted for more of the variance in job satisfaction than did organizational structure.

b. Total principal leadership, principal support, principal interaction facilitation, unit leader interaction facilitation, and unit leader work facilitation were the most influential leader behavior variables in accounting for variance in job satisfaction.

c. Formalization, stratification, centralization unit-wide, building complexity, and centralization extra-school were the most influential organizational structure variables in accounting for variance in job satisfaction.

Based on the findings, some suggestions were made for further research and administrative practice in this domain.

DATE: February 1, 1977

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Abstract

DECISION MAKING OF THE INSTRUCTIONAL IMPROVEMENT COMMITTEE IN IGE SCHOOLS: FUNCTIONS, PROCESSES, AND RELATIONSHIPS

Colin Reginald Joseph Moyle
Under the Supervision of Professor James M. Lipham

The purpose of this study was to observe and describe the functions, processes, and dynamics of group decision making in the Instructional Improvement Committee (IIC) in IGE elementary schools. The theoretical foundations included IGE, social systems, group dynamics, leadership and decision theories.

Field methodology was employed to examine eight established IGE schools diverse in location, socioeconomic level, and ethnic composition. Data were collected through interviews, observations, and questionnaires. Data were analyzed by schools and across schools according to the responses of the staff and based on field notes and observations.

The major findings were:

1. The membership, modes of operation, and functions performed by the IIC differed considerably from the prototypic multiunit organizational model.

2. The IIC performed crucial and significant functions related to the instructional program in IGE schools. Its effectiveness was increased by broadening member understanding of its range of specified functions, and improving administrative arrangements to enhance two-way communication between the IIC and the Instruction and Research units.

3. The representation function of the unit leader was widely accepted. Its effectiveness was enhanced when the unit leader was committed to the concept of IGE and was adequately prepared to discuss and defend in the IIC issues of concern to unit members.

4. Effective unit leader representation contributed to the cohesiveness of the IIC through the facilitation of horizontal and vertical two-way communication.

5. Group cohesion in the IIC increased when there was open two-way communication, when members were satisfied with the decision-making process, and when compatibility existed in personality and teaching philosophy among members.

6. An open, two-way, total interaction style characterized communications in the IIC. Where two-way communication links among unit leaders were weak, units tended to become schools-within-the-school.

7. Task structuring of IIC agenda items increased as the issues involved became more complex, and as principals saw the need to control the outcomes of decisions.

8. The effectiveness of decision making in the IICs was enhanced when principals struck an appropriate balance between instrumental and participative leadership behavior.

9. The shared decision-making process used in the IICs varied by school, but it satisfied staff members, although they perceived their influence on the decisions made to be low.

10. Teacher education institutions which taught IGE-related courses possessed the interest and the resources to stimulate and help sustain the refinement and renewal of IGE.

11. Frequent changes in membership of the IICs were dysfunctional to their operation.

12. Decision making by the IICs in certain curricular and instructional areas was circumscribed because of policies, procedures, and committee structures of the school districts.

13. The failure, in general, of schools to have Systemwide Program Committees, or of the existing SPCs to function according to the multiunit model had a negative effect on the IGE program in the schools.

Based on the findings, several implications for practice and for future research were delineated.

DATE: August 11, 1977

AN ANALYSIS OF THE RELATIONSHIP OF THE MULTIUNIT SCHOOL ORGANIZATIONAL STRUCTURE AND INDIVIDUALLY GUIDED EDUCATION TO THE LEARNING CLIMATE OF PUPILS

Richard Gardner Nelson
Under the supervision of Professor Richard A. Rossmiller

The purpose of this study was to investigate the relationship of the learning climate of pupils to Individually Guided Education (IGE) and the Multiunit Elementary School (MUS-E) organizational structure as developed by the Wisconsin Research and Development Center for Cognitive Learning. IGE/MUS-E is a comprehensive educational system incorporating several innovative educational developments including non-graded multi-aged grouping patterns, shared decision making, differential staffing, a team approach, and an instructional programing model which attempts to provide a program of instruction based on the learning style and needs of each pupil.

The framework for this study was drawn from social system theory and instructional theory as it relates to learning climate and self-concept. The basic question of the study was: Is the IGE/MUS-E organizational structure characterized by a different learning climate than the traditional self-contained organizational structure? To answer this question, five attitudinal variables concerned with learning climate were examined. They were pupil attitude toward himself as a learner and toward other pupils, teachers, instruction, and the school. The instruments employed in the study also permitted the analysis of data concerned with pupils' attitudes toward the school plant, school administration, and the community. Data on attendance and tardiness were also collected. Using an experimental-control group design, a sample of 566 pupils in thirteen Wisconsin IGE/MUS-E elementary schools was compared with 410 pupils in twelve traditionally organized Wisconsin elementary schools with regard to their attitudes toward their learning environment.

The School Morale Scale and the Semantic Differential of Self-Concept as a Learner were employed to collect data on pupil attitude. A multivariate analysis of variance of the five measures of learning climate were performed. Univariate F's were also computed for these measures and for those contained in the ancillary questions. Attendance and tardiness data were analyzed utilizing a *t* test of differences between means. The probability level for all tests of statistical significance was established at .05.

Analysis of the data produced the following findings: Pupils in IGE/MUS-E schools scored significantly higher on the measures termed "learning climate" than did the pupils in traditional schools. Pupils in IGE/MUS-E schools scored significantly higher on measures of attitude toward: self-concept as learners, fellow pupils, instruction, school morale, school plant, and community. No differences were found between the IGE/MUS-E school pupils on measures of pupil attitude toward teachers, school administration, or on records of attendance and tardiness.

Based on these findings, it was concluded that the pupils in the IGE/MUS-E organizational structure generally have a more favorable learning climate than pupils in traditionally organized schools. This conclusion supports those theoretical constructs that view the fulfullment of a pupil's individual need-disposition as a contributing factor in producing a facilitative learning environment, a high morale in school, and a positive learner self-concept.

DATE: May 23, 1972

PARTICIPATIVE DECISION MAKING IN IGE/MUS-E SCHOOLS

Constance M. Nerlinger
Under the supervision of Profesor James M. Lipham

The purpose of this study was to examine the relationships between the Instructional Improvement Committee's involvement in decision making, the representation of teachers on the Instructional Improvement Committee (IIC), and the effectiveness of the Instruction and Research (I&R) Unit in Individually Guided Education/Multiunit Elementary Schools.

The theoretical base for this study was the model of administration as a social process which states that an individual's need-dispositions and role expectations ideally converge to produce effective behavior. The IIC was examined as an organizational structure which allows for the inclusion of people in the planning of work goals and in the administration of tasks which affect them to the benefit of the enterprise (the school).

Three major variables were examined. Extent of involvement in decision making was defined as teachers' perceptions of the level to which the IIC participates in decision-making processes in the school. Representation was defined as the degree to which teachers feel they are represented in the decision processes of the IIC through their unit leader, who may convey their ideas, opinions, and/or misgivings to the IIC and thereby influence administrative decision making. Effectiveness was defined as the joint accomplishment by unit teachers of the I & R unit's objectives as stated in the description of the IGE/MUS-E model.

In addition, six situational variables were identified as being factors which might account for some variation in the dependent variable, effectiveness. These were: unit load (number of pupils per unit teacher), frequency of I & R unit meetings, released time for the unit leader, degree status of the unit leader, total number of pupils in the I & R unit, and the total number of teachers in the unit.

Seven hypotheses were developed to test the relationship of extent of involvement in decision making and representation to effectivencss of the I & R unit as perceived by (1) unit teachers, (2) the unit leader, and (3) both unit teachers and unit leaders. Ancillary questions were posed to compare the perceptions of unit teachers and unit leaders and to examine the relationships of the institutional variables to I & R unit effectiveness.

Two instruments were developed to measure the three main variables. The Decision Involvement and Representation Index allowed each of twenty-five decision items to be assessed as to (1) the extent of involvement by the IIC, and (2) the representation provided by the unit leader. Effectiveness was assessed by the I & R Unit Operations Questionnaire.

Data were collected from 48 randomly selected I & R units in IGE/MUS-E schools in 12 states.

Pearson product-moment correlations, multiple regression equations, and t-tests were used to test the hypotheses and ancillary questions. Subsidiary information was obtained through the use of factor analysis, multiple stepwise linear regression analysis, and a cross tabulation process. The probability level for all tests of statistical significance was established at .05.

The major conclusions were as follows:

1. Extent of involvement in decision making by the IIC was significantly related to effectiveness of the I & R unit.
2. Representation for teachers provided by the unit leader serving on the IIC was significantly related to the effectiveness of the I & R unit.
3. Extent of involvement in decision making and representation together were significantly related to effectiveness of the I & R unit.
4. Extent of involvement in decision making and representation, the two independent variables, were closely related constructs.
5. Frequency of meetings and total number of pupils in a unit were related to the effectiveness of the I & R unit, but only after accounting for the two main independent variables. These two situational variables did not contribute greatly to the variance of effectiveness.
6. Teachers perceived themselves to be more fully represented than involved in the decision-making process.
7. Extent of involvement in decision making by the IIC was perceived by unit leaders and teachers as moving beyond the stage of providing information—toward the level of developing possible alternatives.
8. Representation for teachers provided by the unit leader serving on the IIC was perceived as moderate by respondents in this study.
9. Effectiveness of the I & R unit was perceived by unit leaders and teachers as between "somewhat effective" to "effective."

DATE: March 30, 1975

THE DIFFUSION OF AN INNOVATION THROUGH INTERORGANIZATIONAL LINKAGES: A COMPARATIVE CASE STUDY

Douglas A. Paul
Under the Supervision of Professor James M. Lipham

The translation and institutionalization of the products of knowledge and research into viable educational programs was the generic problem addressed in this study. The innovation of Individually Guided Education in the Multiunit School (IGE/MUS), a development of educational research supported by the Wisconsin Research and Development Center, constituted the focus of the study. The diffusion of IGE/MUS from its source, the R and D Center, to its final destination, local schools, was explored in terms of the complex organizational relationships and roles between and among the R and D Center, the resource system; state education agencies (SEA) and teacher education institutions (TEI), both mediating systems; and local schools (LEA), user system. The relationships among the systems involved with the translation and institutionalization of IGE/MUS was the specific problem addressed by the study.

The conceptual focus and theoretical theme for the study revolved around the relationships between the independent variables of linkage, structure, and capability and the dependent varible of diffusion. A combination of change theory and social-systems theory provided the theoretical framework from which a series of major and ancillary questions were posited. A semi-structured interview schedule was used to collect data from system representatives in three states concerning the questions and probing for relationships, unanticipated barriers, and concerns associated with the dependent variable, diffusion.

The major findings of the study were:

1. IGE/MUS-E as designed by the resource system provided the overarching goal which acted as a reference point for system relationships.

2. Frequency of interaction among the systems was, in descending order, TEI-user system, TEI-SEA, resource system-mediating system, SEA-user system, and resource system-user system.

3. Collaborative, two-way interaction as between TEI-user system, SEA-TEI, and resource system-mediating system, and one-way conveying interaction was between SEA-user system and resource system-user system.

4. Linkage between the TEI and user system was positively related to diffusion of IGE/MUS, but linkages between and among the other systems had less direct impact on diffusion.

5. Internal structure of the TEI, user system, resource system, and SEA contributed, in that order, to the diffusion of IGE/MUS.

6. Internal capability of resource system, TEI, user system, and SEA contributed, in that order, to the diffusion of IGE/MUS-E.
7. Internal factors of structure and capability had varying consequences on diffusion stemming from the mixed results of the items.

The ancillary findings were:

1. The internal variables of structure and capability supported linkage, and linkage constituted the primary means for facilitating the diffusion of IGE/MUS.

2. The TEI exhibited a disaproportionately high influence on the diffusion of IGE/MUS.

3. The TEI was the primary organization for diffusion and it was complemented, supported, and reinforced by the resource system and the SEA.

Unanticipated findings were:

1. A low frequency of resource system-user system linkage, combined with the user system's uncertainty about the resource system's role, contributed to negative perceptions of the resource system in a number of user systems.

2. High frequency of TEI-user system linkage, combined with the user system's conception of the TEI's role which excluded involvement in school operations, contributed to the negative perceptions of the TEI linkage on the part of a number of principals of user systems.

3. Student teachers facilitated linkage between the TEI and user system and they contributed to the capability of the user system.

4. Lack of role agreement between the resource system, on the one hand, and the mediating and user systems, on the other, hindered the maintenance and refinement of interorganizational linkages.

5. Agreement concerning the role of the unit leader was lacking, and the lack of agreement for and recognition of the unit leader's role hindered the diffusion of IGE/MUS.

6. Physical arrangements within user systems affected diffusion—open-space configurations were consistent with and supportive of IGE/MUS.

Implications for future research included (1) expansion of the dependent variable of diffusion to incorporate the new role expectations of the staff, (2) inclusion of quality measures for the independent variable of linkage, (3) revision of the independent variables of structure and capability to account for the linkage relationship, and (4) refinement and verification of the propositions derived from the study. Implications for practice centered on the roles of the resource, mediating, and user systems. The Wisconsin R and D Center should promote, construct, and maintain strong linkages between TEIs and multiunit schools. The state education agencies should support the linkages between the R and D Center, TEI, and LEAs. The teacher education institutions should initiate and maintain frequent face-to-face training linkages with multiunit schools. The local education agencies should be receptive and supportive of extraorganizational linkage relationships especially with the TEI.

Date: July 30, 1974

PERCEIVED ROLE AND EFFECTIVENESS OF THE UNIT LEADER IN CONDUCTING UNIT FUNCTIONS—1974

Terrance John Sheridan
Under the Supervision of Professor James M. Lipham

A system of Individually Guided Education in the Multiunit Elementary School (IGE/MUS-E), developed at the Wisconsin Research and Development Center, organizes the school into Instruction and Research Units (I&R Units) headed by a new role—that of unit leader. This study determined the extent of agreement among and between principals, teachers, and unit leaders regarding expectations held for the unit leader role; examined the relationship between referent group agreement and performance effectiveness ratings; and investigated the relationship between selected organizational variables and agreement on role expectations.

Social systems theory was utilized in hypothesizing that 1) no differences exist between principals, teachers, and unit leaders regarding expectations held for the unit leader role, and 2) there is a positive relationship between agreement on role expectations and ratings of performance effectiveness.

Tasks typically performed by unit leaders were identified from the literature and practice and reduced to a survey instrument containing 56 tasks. The Unit Leader Role Analysis (ULRA) was pilot tested for validity and reliability and factor analyzed into four scales dealing with intraorganizational relationships, extraorganizational relationships, instructional coordination, and management activities. Data were collected from a sample of 48 principals, 48 unit leaders, and 96 teachers from 48 schools in 32 Wisconsin districts.

Descriptive data were obtained to present a demographic profile of the sample. Differences among respondent groups in role expectations were analyzed by one-way analysis of variance for each scale of the ULRA. *T*-tests were performed for each scale between all possible combinations of groups when the *f* value produced by analysis of variance proved significant. Relationships between the extent of agreement on expectations, ratings of performance effectiveness, and selected organizational variables were tested by means of the Pearson product-moment correlation coefficient. Correlations were computed using both sign and absolute difference scores for each scale of the instrument. The probability level for all tasks of statistical significance was established at .05.

The major findings of the study were as follows:

1. Statistically significant differences were found among principals, teachers, and unit leaders in expectations held for the unit leader role on tasks dealing with instructional coordination and intraorganizational relationships.
2. A statistically significant difference was found between principals and unit leaders for tasks dealing with instructional coordination.
3. Statistically significant differences were found between principals and unit teachers for tasks related to instructional coordination and intraorganizational relationships.
4. No significant relationship was established between referent group agreement on unit leader role expectations and ratings of unit leader performance effectiveness.
5. A statistically significant relationship was found between principal and unit leader agreement on expectations for tasks dealing with management activities and principal ratings of unit leader overall effectiveness.
6. A statistically significant relationship was found between unit leaders and teacher agreement on expectations for tasks related to instructional coordination and teacher ratings of unit leader overall effectiveness.
7. Principal and unit leader agreement on role expectations regarding extraorganizational relationships was significantly correlated with staff participation in orientation activities prior to implementing IGE.

In terms of theory and research it was suggested that social systems theory is useful, that better measures of role effectiveness are needed, and that case and longitudinal studies in these domains should be conducted. Concerning practice, it was suggested that principal, teacher, and unit leader communication should be increased; that the organizational model and unit leader role be further refined; and that the factors of the ULRA be examined for their relevance to problems in selection, training and operation of IGE/MUS-E schools.

DATE: May 6, 1974

EFFFECTIVENESS OF THE INSTRUCTION AND RESEARCH UNIT AND STUDENT ACHIEVEMENT IN IGE SCHOOLS

Conrad Wilhelm Sigurdson
Under the supervision of Professor James M. Lipham

The purpose of this study was to ascertain the extent to which organizational aspects of Individually Guided Education schools relate to cognitive achievement of students in those schools. The theoretical framework for the study was conceptualized within general and social systems theories which suggest relationships between inputs, processes, and outputs. The Instructional and Research Unit of the IGE school was the unit of analysis. The theories suggested linkages between Instruction and Research unit effectiveness and student cognitive achievement in reading and mathematics. Effectiveness of the I & R unit was measured by the I & R Unit Operations Questionnaire in which teachers report perceptions of how well their unit accomplishes the institutional expectations or the performance objectives set for them. Student achievement in reading and mathematics was measured by a standardized test battery, the Comprehensive Tests of Basic Skills, Form S.

Data were collected from 42 I & R units, selected at random from a national population of 959 schools which were in at least their third year of IGE implementation. Unit mean scores were computed for the I & R Unit Operations Questionnaire and for the student achievement tests in reading and mathematics. In general staff members perceived their I & R unit as being effective. The achievement levels of students in IGE schools in both reading and mathematics compared favorably with the national norms.

Pearson product-moment correlations and multiple regression equations were used to test the hypotheses in the study.

Two basic null hypotheses were tested to determine interrelationships of I & R unit effectiveness and student cognitive achievement:

1. There is no significant relationship between the unit mean scores in I & R unit total effectiveness and unit mean scores in total reading.
2. There is no significant relationship between the unit mean scores in I & R unit total effectiveness and unit mean scores in total mathematics.

In addition to these two main hypotheses, subhypotheses relating to subscales of the I & R Unit Operations Questionnaire and subscales of the reading and mathematics tests were tested.

The correlations revealed that there was no statistical significance between I & R unit effectiveness and student achievement in reading and mathematics. The stepwise linear regression analysis indicated that the independent variables of I & R unit effectiveness accounted for a very small part of the variance in the dependent achievement variables of reading and mathematics.

Based upon the findings of this study, it is not possible to state empirically whether there is any relationship between the effectiveness of the I & R unit and student achievement in that unit. Suggestions were offered for further definitive research in this domain.

DATE: May 12, 1976

AN ANALYSIS OF THE RELATIONSHIP BETWEEN EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTIONAL IMPROVEMENT COMMITTEE AND INTERPERSONAL AND LEADER BEHAVIORS

Kenneth Blaine Smith
Under the supervision of Professor Donald N. McIsaac

The multiunit elementary school, developed by the Wisconsin Research and Development Center for Cognitive Learning, is an organizational structure for elementary schools which incorporates shared decision making into its operations. The multiunit school's Instructional Improvement Committee (IIC) links the teaching and administrative levels of the school by having teacher representatives and the building principal share the responsibility for formulating decisions, plans, and procedures which coordinate the school's instructional program. The IIC has been provided with operational guidelines by the Wisconsin Research and Development Center, but recent studies have indicated a discrepancy between actual and prescribed IIC operations.

The purpose of the study was to determine those variables which associate with operationally effective IIC's.

The framework for the study was drawn from social system theory, leadership theory, and Schutz's theory of interpersonal compatibility. The major hypothesis of the study stated: There is no significant multiple correlation between IIC effectiveness and the interrelationship between the IIC chairman's leader initiation of structure and consideration behavior and IIC chairman-IIC member compatibility. A model of task groups was proposed as a means to describe pictorially the interrelationship of these variables and IIC effectiveness. Four factors that researchers and practitioners had suggested were related to IIC effectiveness were analyzed individually: IIC member attendance at R and D Center supported workshops for multiunit school principals and unit leaders; the IIC's involvement in its prescribed tasks; the IIC chairman's administrative experience; and the length of time the IIC spends together each month. Data were collected from nine schools in five Colorado school districts and from twenty-two schools in seventeen Wisconsin districts.

The Leadership Behavior Description Questionnaire-Form XII and the FIRO-B (Fundemental Interpersonal Relations Orientation-Behavior) questionnaires were employed to collect data on the IIC chairman's leader behavior and on the IIC chairman's and the IIC members' interpersonal relations orientations, respectively. Biographical data also were collected from all IIC members. Modification of Hage's output measures were combined with an assessment of an IIC's involvement in its prescribed tasks to determine each IIC's effectiveness.

A multiple stepwise linear regression analysis was used to test the major hypothesis and to determine an expanded regression model for IIC effectiveness. A Pearson *r* was used to test the suggested relationships. The probability level for all tests of satistical significance was established at .05.

The analyses of the data revealed the following: A significant multiple correlation existed between IIC effectiveness and the interrelationship of the IIC chairman's leader consideration and initiation of structure behaviors and IIC chairman-IIC member compatibility. The expanded regression model revealed a significant multiple correlation between IIC effectiveness and the interrelationship of (1) the IIC chairman's leader consideration behavior, (2) the amount of time the IIC spent meeting together each month, (3) the IIC whose members have a preference for interaction with others, (4) the IIC whose members have a preference for close personal relations both toward people and from them, (5) IICs with fewer members, and (6) IICs in which there is no individual in control. The tests of the assumed correlations revealed IIC effectiveness to be significantly related to an IIC's involvement in its prescribed tasks. The effectiveness of an IIC was found not to be related significantly to IIC member attendance at R and D Center supported workshops, the IIC chairman's administrative experience, or the amount of time the IIC spent meeting together each month when the variable was considered separately.

DATE: July 17, 1972

THE RELATIONSHIP OF ORGANIZATIONAL STRUCTURE TO ORGANIZATIONAL ADAPTIVENESS IN ELEMENTARY SCHOOLS

James Ellsworth Walter
Under the supervision of Professor James M. Lipham

The purpose of this study was to examine the organizational structures of elementary schools in terms of complexity, centralization, formalization, stratification, and job satisfaction, and to analyze the relationship of these variables to the adaptiveness of elementary schools. A secondary purpose was to compare the Multiunit School-Elementary (MUS-E) type of school organization with non-MUS-E types of school organization. Adaptiveness, defined in terms of the activities elementary school staffs carry out to adapt instructional and learning programs to the differences identified among children, was measured with regard to student activities, teacher activities, and individualization. The latter measure was a combination of the first two. The theoretical framework was based primarily on Hage's axiomatic theory of organizations.

In this study, it was hypothesized that there was no relationship between the properties of organizational structure and organizational adaptiveness. It was further hypothesized that there was no relationship between:

Complexity and adaptiveness;
Centralization and adaptiveness;
Formalization and adaptiveness;
Stratification and adaptiveness;
Instrumental job satisfaction and adaptiveness; and
Expressive job satisfaction and adaptiveness.

The study population consisted of 1,000 MUS-E schools located in 14 states, established under the aegis of the Wisconsin Research and Development Center for Cognitive Learning and a corresponding set of non-MUS-E schools located in the same district. Thirty-eight schools, twenty MUS-E schools and 18 non-MUS-E schools, participated in the study. Data were gathered using a questionnaire distributed to principals and ten randomly selected teachers in each school.

Data were analyzed using multiple stepwise regression techniques with no exclusion or inclusion criteria. Comparisons between the MUS-E schools and the non-MUS-E schools on each of the organizational structures and on adaptiveness were made using univariate analysis of variance, and a comparison of both types of schools on the dependent variable alone was made using a chi-square formula.

The major findings of the study were as follows:

1. There was a relationship between the properties of organizational structure and organizational adaptiveness.
2. There was a negative relationship between complexity (measured as the number of administrative positions) and adaptiveness (measured as student activities and as individualization). There was no relationship between complexity (measured as the number of special purpose workshops attended per year) and any of the measures of adaptiveness.
3. There was a relationship between centralization and adaptiveness (measured as student activities and individualization).
4. There as no relationship between formalization and adaptiveness.
5. There was a negative relationship between stratification and adaptiveness.
6. There was no relationship between instrumental job satisfaction and adaptiveness.
7. There was no relationship between expressive job satisfaction and adaptiveness.
8. There were no differences between the two types of schools on complexity, formalization, stratification, and job satisfaction.
9. MUS-E schools had significantly lower centralization than non-MUS-E schools.
10. MUS-E schools were significantly more adaptive than non-MUS-E schools.

While the study provided evidence that organizational structures were related to organizational adaptiveness, it revealed that factor(s) in addition to the structural variables were contributing to the adaptiveness of MUS-E schools. In other words, while MUS-E and non-MUS-E schools were not substantially different with regard to the organizational structures, MUS-E schools were significantly more adaptive. Moreover, when treated as an independent variable, the condition of MUS-E accounted for more of the variance in adaptiveness than any one of the organizational structures.

DATE: July 23, 1973

DEVELOPMENT OF AN INSTRUMENT TO MEASURE REAL AND IDEAL DECISION STRUCTURE AND INVOLVEMENT IN IGE SCHOOLS

Kenneth W. Wright
Under the Supervision of Professor James M. Lipham

The purpose of this study was to develop valid and reliable instrumentation to measure the perceptions of teachers regarding the structures for making decisions and the level of involvement of teachers in making potent decisions in IGE schools.

The theoretical framework for the study was decision theory. Elements of Lipham's model of the decision-making process and of Dale's definition of decentralization of decision making were incorporated into the instrument. In contrast to previous research in decision theory, this study attempted to ground the theoretical framework in observed and reported phenomena as well as to examine relationships with other constructs.

The study was conducted in three phases: 1) the definition phase; 2) the instrument construction phase; and 3) the instrument testing phase. In the definition phase, the domains of decision content, decision structures, and the decision-making process in IGE schools were defined. Data were collected from three sources. First, participants at one national and two regional IGE conferences were interviewed and asked to respond to a questionnaire. Second, interviews were conducted with teachers, unit leaders, and principals in nine exemplary IGE schools, three each from California, New Jersey, and South Carolina. Third, the IGE literature was reviewed for additional items in each domain.

In the instrument construction phase, a panel of experts rated the potency of the decision content items and the most potent items were included in the pilot version of the instrument. The response format regarding decision structures and involvement in the decision-making process were tested in four IGE elementary schools in Wisconsin and refined. The instrument was piloted in five of the nine schools involved in the interviews of the definition phase. Factor analysis and tests for internal consistency were utilized to determine the subscales and the reliability of the pilot version instrument. The pilot version instrument was revised into the final version to be tested.

In the instrument testing phase, the final version of the instrument was administered in 77 randomly selected IGE elementary schools in 13 states. All of the schools returned useable data.

The major findings of the study were as follows:

1. IGE teachers perceived themselves to have moderately high involvement in making potent decisions of unit-subunit scope, some involvement in making potent decisions of schoolwide scope, and little involvement in making potent decisions of extra-school scope.
2. IGE teachers desired greater involvement in making potent decisions, especially in decisions of schoolwide and extra-school scope.
3. The IIC and the SPC were not functioning widely as decision-making structures.
4. The I and R Unit was functioning as a decision-making structure for decisions of unit-subunit scope in the majority of IGE schools.
5. IGE principals were perceived as making more potent decisions presently than was ideal.
6. There was a significant negative relationship between the perceived level of involvement of teachers in the decision-making process and the perceived effectiveness of I and R Unit operations. The negative correlations were minimal, however.
7. The instrument constructed in this study provided a valid and reliable means to measure perceptions of the real and ideal decision structures utilitzed in and the real and ideal levels of involvement of teachers in the decision-making process in IGE elementary schools.

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